South Dakota Extended Content and Alternate Academic Achievement Descriptors for Students with Significant Cognitive Disabilities

Math Extended Content

south dakota
DEPARTMENT OF EDUCATION
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Special Education Programs
Mission Statement

Special Education Programs located in the South Dakota Department of Education advocates for the availability of the full range of personnel, programming, and placement options, including early intervention and transition services, required to assure that all individuals with disabilities are able to achieve maximum independence upon exiting from school.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE K

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

Note: Kindergarten students do not master standards for Indicator 1. Mastery of this indicator emerges and increases from grade 3 upward.

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
K.A.2.1. Students are able to compare collections of objects to determine more, less, and equal (greater than and less than).

Extended Content
K.A.A.2.1. Students are able to compare a collection of objects to determine more, less and equal to.

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to make collections to show more, less and equal to.	

Applying: Students are able to compare a collection of objects to determine more, less and equal to.	• Show students piles of teddy bears and determine which set is more, less, equal.
Developing: Students are able to identify a collection of objects that represents more or less.	
Introducing: Students are able to explore a collection of objects.	

Indicator 3: Interpret and develop mathematical models.

General Education Standard
K.A.3.1. Students are able to use concrete objects to model the meaning of the "+" and "-" symbols.

Extended Content
K.A.A.3.1. Students are able to manipulate objects or picture cues to demonstrate the increase or decrease of a set of objects.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to tell or show which group of objects has more or less.	
Applying: Students are able to manipulate objects or picture cues to demonstrate the increase or decrease of a set of objects.	• Given a verbal cue, students will add/take away from a set of teddy bears.
Developing: Students are able to manipulate objects to demonstrate the increase or decrease of a set of objects.	
Introducing: Students are able to explore a collection of objects.	

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard
K.A.4.1. Students are able to identify and extend two-part repeating patterns using concrete objects.

Extended Content
K.A.A.4.1. Students are able to identify a pattern with objects.

Extended Content Grade level Achievement Descriptor	Target Skills
Advancing: Students are able to extend two part patterns.	
Applying: Students are able to identify a pattern with objects.	• Recites a given pattern.
Developing: Students are able to identify simple patterns in the context of play.	
Introducing: Students are able to play with objects containing simple patterns.	

General Education Standard **K.A.4.2. Students are able to sort and classify objects according to one attribute.** **Extended Content** **K.A.A.4.2. Students are able to sort objects**.	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to sort and classify objects.	
Applying: Students are able to sort objects.	**Example:** sort objects by color
Developing: Students are able to sort objects according to 1 attribute.	
Introducing: Students are able to collect desired objects.	

GEOMETRY

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
K.G.1.1. Students are able to identify basic two-dimensional (plane) figures.

Extended Content
K.A.G.1.1. Students are able to identify (plane) shapes (squares, circle, triangle, rectangle).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify and describe plane figures.	
Applying: Students are able to identify (plane) shapes.	**Example:** name or match
Developing: Students are able to recognize a square, circle, rectangle and triangle.	
Introducing: Students explore items in the shape of a square, circle, rectangle and triangle.	

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
K.G.2.1. Students are able to describe the position of two-dimensional (plane) figures.

Extended Content
K.A.G.2.1. Students are able to position shapes in relation to positional words.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to find examples of plane figures in the environment.	
Applying: Students are able to position shapes in relation to positional words. *(continued on next page)*	• Put the square under your chair
Developing: Students are able to sort objects of the same shape.	
Introducing: Students are able to explore/manipulate like objects.	

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
K.M.1.1. Students are able to tell time to the hour using analog and digital clocks.

Extended Content
K.A.M.1.1. Students are able to recognize the concept of time.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to tell time to the hour.	
Applying: Students are able to recognize the concept of time.	• Follow a daily routine.
Developing: Students are able to identify night and day.	
Introducing: Students are able to indicate when tired.	

General Education Standard
K.M.1.2. Students are able to name the days of the week.

Extended Content
K.A.M.1.2. Students are able recognize/use the names of the days of the week in association with daily activities.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recite the days of the week.	
Applying: Students are able to recognize/use the names of the days of the week in association with daily activities.	• Tuesday is music.

Developing: Students are able to recognize/use the names of the days of the week in association with a song or rhyme.	
Introducing: Students are able to celebrate birthday.	

General Education Standard
K.M.1.3. Students are able to identify pennies, nickels, dimes, and quarters using money models.

Extended Content
K.A.M.1.3. Students are able to show understanding of the concept of money.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify a penny, nickel, and dime.	
Applying: Students are able to understand the concept of money.	
Developing: Students are able to play with real money.	
Introducing: Students are able to play with toy money.	

General Education Standard
K.M.1.4 Students are able to estimate length using non-standard units of measure.

Extended Content
K.A.M.1.4. Students are able to compare objects by length.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use a non standard unit of measure to measure an object.	
Applying: Students are able to compare objects by length.	• Which is longer, pencil or yardstick?

Developing: Students are able to play with longer and shorter objects.	
Introducing: Students are able to explore objects that are longer and shorter.	

General Education Standard
K.M.1.5. Students are able to compare and order concrete objects by length, height, and weight.

Extended Content
K.A.M.1.5. Students are able to compare objects by height.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare height of an object to self.	
Applying: Students are able to compare objects by height.	• Compare self to the height of the door.
Developing: Students are able to arrange objects according to height.	
Introducing: Students are able to play with various objects of different height.	

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
K.N.1.1. Students are able to read, write, count, and sequence numerals to 20.

Extended Content
K.A.N.1.1. Students are able to identify numbers 0-9.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to count numbers 0-9.	
Applying: Students are able to identify numbers 0-9.	
Developing: Students are able to identify numbers 0-5.	
Introducing: Students are able to explore numbers.	

General Education Standard
K.N.1.2 Students are able to use fraction models to create one half of a whole.

Extended Content
K.A.N.1.2 Students are able to distinguish a fractional part from a whole.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify parts of a whole.	
Applying: Students are able to distinguish a fractional part from a whole.	• 1/2 an apple or a whole apple.
Developing: Students are able to separate a collection of objects into 2 equal parts.	
Introducing: Students are able to demonstrate knowledge of a whole.	

Indicator 3: Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.

General Education Standard
K.N.3.1. Students are able to solve addition and subtraction problems up to 10 in context.

Extended Content
K.A.N.3.1. Students are able to solve addition/subtraction problems by counting on/counting back by one with numbers up to 9.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve addition/subtraction problems by counting on.	
Applying: Students are able to solve addition/subtraction problems by counting on/counting back by one with numbers up to 9.	• Using a set of manipulatives add one more to 3.
Developing: Students are able to solve addition/subtraction problems by counting on/counting back by one up to 5.	
Introducing: Students are able to give one more.	

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
K.S.1.1. Students are able to describe data represented to simple graphs (using real objects) and pictographs.

Extended Content
K.A.S.1.1. Students are able to identify a correct graph using real objects.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to make a graph using real objects.	
Applying: Students are able to identify a graph using real objects.	• Using red, green, and yellow apples, students will select the graph that represents the apples.
Developing: Students are able sort objects onto a graph using 1 attribute (size, color).	
Introducing: Students are able to gather objects of one attribute.	

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 1

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Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
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1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

Note: First grade students do not master standards for Indicator 1. Mastery of this indicator emerges and increases from grade 3 upward.

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
1.A.2.1. Students are able to use the concepts and language of more, less, and equal (greater than and less than) to compare numbers and sets (0 to 20).

Extended Content
1.A.A.2.1. Students are able to use the concepts of more, less, and equal to compare objects 0-5.

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to use the symbols of greater than, less than an equal to with numbers 0-5.	• Use the symbol for greater than between two numbers (>)

	• Use the symbol for less than between two numbers (<) • Use the symbol for equal between two numbers (=)
Applying: Students are able to use the concepts of more, less, and equal to compare objects 0-5.	• Use the concept of more to compare objects 0-5 **Example:** 1. Given two sets of objects indicate which set has more • Use the concept of less to compare objects 0-5 **Example:** 1. Given two sets of objects indicate which set has less • Use the concept of equal to compare objects 0-5 **Example:** 1. Given two sets of objects indicate if the sets are equal
Developing: Students are able to identify which is more.	**Example:** 1. Which set has more
Introducing: Students are able to indicate wanting more.	**Example:** 1. With sound or gesture indicate that the student wants more (water, food, paint)

General Education Standard
1.A.2.2. Students are able to solve open addition and subtraction sentences with one unknown (☐) using numbers equal to or less than 10.

Extended Content
1.A.A.2.2 Students are able to solve addition and subtraction sentences equal to or less than 5 using manipulatives.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve addition and subtraction sentence equal to or less than 5.	• Solve addition sentences up to 5 **Example:** 1. 2+2=4 • Solve subtraction sentences up to 5 **Example:** 1. 3-1=2

Applying: Students are able to solve addition and subtraction sentences equal to or less than 5 using manipulatives.	• Solve addition sentences up to 5 with manipulatives **Example:** 1. If I have 2 bears and I slide over 2 more, how many bears do I have • Solve subtraction sentences up to 5 with manipulatives **Example:** 1. If I have 2 bears and I slide 1 away , how many bears do I have
Developing: Students are able to use manipulatives to retell a familiar song or rhyme.	• Recognize pattern or rhyme in voices or song **Example:** 1. One, two buckle my shoe 2. 5 Little Monkeys, 4 Little Monkeys etc.
Introducing: Students are able to respond to song or rhyme.	

Indicator 3: Interpret and develop mathematical models.

General Education Standard
1.A.3.1. Students are able to write number sentences from problem situations using + or – and = with numbers to 10.

Extended Content
1.A.A.3.1. Students are able to construct a simple number sentence using + or – and = with numbers to five, using manipulatives.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to construct a simple number sentence using + or – and = with numbers to five.	• Construct an addition number sentence **Example** : 1. 2+1=3 • Construct a subtraction number sentence **Example** : 1. 3-1=2

Applying: Students are able to construct a simple number sentence using + or – and = with numbers to five, using manipulatives.	• Construct an addition number sentence **Example:** 1. Given teddy bears, students will make an addition sentence 2 bears + 1 bear = 3 bears • Construct a subtraction number sentence **Example:** 1. Given teddy bears, students will make an additions sentence 2 bears - 1 bear = 1 bears
Developing: Students are able to use a model to repeat a given number sentence using manipulatives with assistance.	• Given a model of an addition number sentence the student will copy it using manipulatives with assistance. **Example:** 1. When shown 2 bears and 3 bears equals 5 bears, the student will copy the model • Given a model of a subtraction number sentence the student will copy it using manipulatives with assistance. **Example:** **1.** When shown 4 bears take away 1 bears equals 3 bears, the student will copy the model**.**
Introducing: Students are able to see a model to imitate a given number sentence using manipulatives with assistance. *(continued on next page)*	• Given a model of an addition number sentence the student will copy it with assistance (hand over hand) **Example:** 1. When shown 2 bears and 3 bears equals 5 bears, the student will copy the model with assistance • Given a model of a subtraction number sentence the student will copy it with assistance (hand over hand) **Example:** 1. When shown 4 bears take away 1 bears equals 3 bears, the student will copy the model with assistance

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard
1.A.4.1. Students are able to identify and extend repeating patterns containing multiple elements using objects and pictures .

Extended Content
1.A.A.4.1. Students are able to identify and copy an AB pattern using manipulatives

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create an AB pattern.	• Draw circle, square pattern • Create number pattern 1,2,1,2,1,2
Applying: Students are able to identify and copy an AB pattern using a manipulatives.	
Developing: Students are able to copy an AB pattern.	• When show a pattern with pattern blocks of red, green the student will copy it
Introducing: Students are able to respond to a modeled pattern.	• Stomp feet, clap hands, blink eyes • Pat-a-cake

General Education Standard
1.A.4.2. Students are able to determine common attributes in a given group and identify those objects that do not belong.

Extended Content
1.A.A.4.2. Students are able to determine one common attribute in a given group and identify the object that doesn't belong.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to determine likeness and difference between sets. *(Continued on next page)*	• Determine what is the same in a set **Example:** 1. When shown a set of dinosaurs of different colors – student identifies that they are all dinosaurs • Determine what is different in a set **Example:** 1. When shown a set of dinosaurs of

	different colors – student identifies that they are different colors
Applying: Students are able to determine one common attribute in a given group and identify the object that doesn't belong.	• Determine common attribute in a group **Example:** 1. When shown different colored circles the student will identify that they are all circles • Identify the object in a group that doesn't belong **Example:** 1. If given 3 circles and 1 square, identify the one that doesn't belong
Developing: Students are able to sort by one common attribute into sets of 2.	• Given a set of manipulatives the student will divide by shape, color, size….
Introducing: Students are able to sort objects in daily play.	• Sort mittens, socks, balls

GEOMETRY

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard **1.G.1.1. Students are able to describe characteristics of plane figures.** **Extended Content** **1.A.G.1.1. Students are able to describe 1 characteristic of a plane figure.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to describe plane and solid figures.	• Describe solid figures **Example:** 1. Cylinder is a soup can • Describe plane figures **Example:** 1. Circle is round
Applying: Students are able to describe 1 characteristic of a plane figure.	• Circle is round • Square is like a cracker

Developing: Students are able to name a square, circle, rectangle and triangle.	
Introducing: Students are able to play with square, circle, rectangle and triangle.	

General Education Standard
1.G.1.2. Students are able to sort basic three-dimensional figures

Extended Content
1.A.G.1.2. Students are able to sort basic three-dimensional figures.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to sort plane and solid figures.	• Sort plane figures **Example:** 1. Crackers, pattern blocks • Sort solid figures **Example:** 1. Cans, cereal boxes, funnels, balls, erasers, dice
Applying: Students are able to sort basic three-dimensional figures**.**	• Soup cans, cereal boxes, etc…
Developing: Students are able to sort cubes and spheres.	• Sort cubes • Sort spheres
Introducing: Students are able to manipulate cubes and spheres.	• Manipulate cubes **Example:** 1. Dice, cheese cubes • Manipulate spheres **Example:** 1. Balls, marbles

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
1.G.2.1. Students are able to describe proximity of objects in space.

Extended Content
1.A.G.2.1. Students are able to describe proximity (near and far) of objects in relation to self.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe proximity (near and far).	• Describe near (The car is near the stop sign.) • Describe far (The grocery store is far from the school.)
Applying: Students are able to describe proximity (near and far) of objects in relation to self.	• Indicate whether an object is near (Is the door near you?) • Indicate whether an object is far (Is the gym far from you?)
Developing: Students are able to identify proximity (near and far) of objects in relation to self.	
Introducing: Students are able to demonstrate the perception of space.	• Steps up when comes to a step • Looks for pencil on the floor when it rolls off the table

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
1.M.1.1. Students are able to tell time to the half hour using analog and digital clocks and order a sequence of events with respect to time.

Extended Content
1.A.M.1.1. Students are able to tell time to the hour using a digital clock and order of morning, noon and night.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to tell time to the hour using an analog clock.	
Applying Students are able to tell time to the hour using a digital clock and order of morning, noon and night.	• Tell time to the hour using a digital clock. • Order sequence of time (morning, noon and night, **Example**: 1. Picture of child saying Pledge of Allegiance, is that morning, noon or night?
Developing: Students are able to identify the object that tells time.	• Points to the clock

Introducing: Students are able to approximate lunch time.	• Indicate hunger **Example:** 1. Hit hand of spoon on table

General Education Standard
1.M.1.2. Students are able to find a date on the calendar.

Extended Content
1.A.M.1.2. Students are able to find a date on the calendar given a model.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to name days of the week.	
Applying: Students are able to find a date on the calendar given a model	• When shown the number 12, find it on the calendar
Developing: Students are able to identify one or more holidays.	• When do you see Santa, the Easter Bunny?
Introducing: Students are able to participate in holidays.	• Sings holiday songs

General Education Standard
1.M.1.3. Students are able to use different combinations of pennies, nickels, and dimes to represent money amounts up to 25 cents.

Extended Content
1.A.M.1.3. Students are able to identify coin and value of a penny, nickel and dime.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to count a set of the same coin.	• Count a set of dimes, count a set of pennies
Applying: Students are able to identify coin and value of a penny, nickel, and dime.	• Identify penny, nickel or dime • State the value of penny, nickel or dime **Example**: 1. Point to the penny and state how much is it worth

Developing: Students are able to recognize penny, nickel and dime.	• Recognize a penny • Recognize a nickel • Recognize a dime
Introducing: Students are able to play with real money.	• Given a set of real coins will touch, feel money

General Education Standard
1.M.1.4. Students are able to estimate weight using non-standard units of measure.

Extended Content
1.A.M.1.4. Students are able to estimate weight of objects when held to determine heavier than/lighter than.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to estimate weight using non standard units.	• On a scale the student will estimate how many teddy bears an apple would weigh
Applying: Students are able to estimate weight of objects when held to determine heavier than/lighter than.	• Identify which object is heavier **Example:** 1. If holding two objects identify which is heavier • Identify which object is lighter **Example:** 1. If holding two objects identify which is lighter
Developing: Students are able to compare the weight of two objects.	• Identify two objects that are about the same weight (paper and a tissue, pencil and pen)
Introducing: Students are able to recognize that objects have weight.	• Places objects on a scale to compare the weights

General Education Standard
1.M.1.5. Students are able to identify appropriate measuring tools for length, weight, capacity, and temperature.

Extended Content
1.A.M.1.5. Students are able to identify appropriate measuring tools for length, weight and temperature.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to speak the language of measurement.	• Speak the language for length **Example:** 1. A ruler is used to measure inches and feet • Speak the language for weight **Example:** 1. Scale is used to measure ounces and pounds • Speak the language for temperature **Example:** 1. Thermometer is used to measure temperature
Applying: Students are able to identify appropriate measuring tools for length, weight and temperature.	• Identify appropriate tool for length **Example:** 1. Ruler • Identify appropriate tool for weight **Example:** 1. Scale • Identify appropriate tool for temperature **Example:** 1. Thermometer
Developing: Students are able recognize a thermometer, ruler and scale.	• Recognize a thermometer **Example**: 1. Point to a thermometer • Recognize a ruler **Example**: 1. Point to a ruler • Recognize a scale • **Example**: 1. Point to a scale
Introducing: Students are able to play with light and heavier or longer and shorter objects.	• Plays with objects that are light and heavy **Example:** 1. Rag doll and hard ball 2. Balloon and basketball • Plays with objects that are longer and shorter objects **Example:** 1. Necklace and bracelet

General Education Standard
1.M.1.6. Students are able to compare and order concrete objects by temperature and capacity.

Extended Content
1.A.M.1.6 Students are able to compare and classify concrete objects by temperature.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to order objects by temperature.	• Sun, computer, tile floor etc… • Hot to cold or cold to hot.
Applying: Students are able to compare and classify concrete objects by temperature.	• Compare objects by temperature **Example:** 1. Stove is hot and ice cream cone is cold • Classify objects by temperature **Example:** 1. Sun, lamp, stove are all warm 2. Circle the objects that are cold
Developing: Students are able to identify objects that are hot.	
Introducing: Students are able to reacts to hot/cold stimuli.	**Example:** 1. Pull hand away if hot 2. Take coat off when warm

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
1.N.1.1. Students are able to read, write, count, and order numerals to 50.

Extended Content
1.A.N.1.1. Students are able to read, write, count, and order numerals to 20.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to sequence and write an array numbers to 20.	• When given numbers 12, 2, 16, write them in sequence

Applying: Students are able to read, write, count, numerals to 20.	• Read numbers to 20 • Write numbers to 20 • Count numbers to 20 • Sequence numbers to 20
Developing: Students are able to count and read numbers to 10.	• Count numbers to 10 • Read numbers to 10 **Example:** 1. When shown 2, 3, 1 the student will say two, three, one
Introducing: Students are able to count 0-9.	

General Education Standard
1.N.1.2. Students are able to use unit fraction models to create parts of a whole.

Extended Content
1.A.N.1.2 Students are able to use unit fraction models to create half to whole.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify and represent unit fractions using concrete materials.	• Identify unit fractions using concrete materials **Example:** 1. Point to half a candy bar • Represent unit fractions using concrete materials **Example:** 1. Cut a candy bar in half 2. Divide the play dough in half
Applying: Students are able to use unit fraction models to create half to whole.	• Use two part puzzles to make an apple
Developing: Students are able to recognize part of an object	• If shown part of an object (shirt sleeve) student would identify that it was part of a whole (shirt)
Introducing: Students are able to recognize whole object.	• If shown part of an object (shirt sleeve) student would identify that it was part of a whole (shirt)

Indicator 2: Apply number operations with real numbers and other number systems.

General Education Standard
1.N.2.1. Students are able to solve addition and subtraction problems with numbers 0 to 20 written in horizontal and vertical formats using a variety of strategies.

Extended Content
1.A.N.2.1. Students are able to solve addition and subtraction problems with numbers 0-5 using a variety of strategies.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to write addition and subtraction sentences. (0-5)	• Write addition sentences with numbers 0-5 • Write subtraction sentences with numbers 0-5
Applying: Students are able to solve addition and subtraction problems with numbers 0-5 using a variety of strategies.	• Solve addition problems with numbers 0-5 using a variety of strategies **Example:** 1. Using manipulatives, number line, or touch points • Solve subtraction problems with numbers 0-5 using a variety of strategies **Example:** 1. Using manipulatives, number line, or touch points
Developing: Students are able to model one more than one.	• Here is one pencil, give me one more
Introducing: Students are able to model one.	• Give me one pencil

Indicator 3: Develop conjectures, predictions, or estimations to solve problems and Verify or justify the results.

General Education Standard
1.N.3.1. Students are able to solve addition and subtraction problems up to 20 in context.

Extended Content
1.N.3.1. Students are able to solve addition and subtraction problems up to 10 with manipulatives.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve horizontal and vertical addition and subtraction problems.	• Solve horizontal addition to 10 **Example:** 1. 2+4=__ • Solve vertical addition • Solve horizontal subtraction **Example:** 1. 4 - 2=__ • Solve vertical subtraction
Applying: Students are able to solve addition and subtraction problems up to 10 with manipulatives.	• Solve addition and subtraction problems to 10 using manipulatives
Developing: Students are able to model sums up to 5 using manipulatives.	• Solve addition problems to 5 **Example:** 1. 3+1=__ solve using manipulatives
Introducing: Students are able to model a sum of two.	• Given 1 bear and 1 bear, show 2 bears

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
1.S.1.1. Students are able to describe data in simple picture graphs with units of one and bar graphs with intervals of one.

Extended Content
1.A.S.1.1. Students are able to describe data represented by simple graphs.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to organize and display data create a simple graph.	
Applying: Students are able to describe data represented to simple graphs (using real objects).	• Using real objects tell that there are 10 red apples and 3 green apples
Developing: Students are able to model sums up to 5 using manipulatives.	
Introducing: Students are able to sort objects.	

General Education Standard
1.S.1.2. Students are able to answer questions from organized data.

Extended Content
1.A.S.1.2. Students are able to answer questions from simple graphs.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to form questions from simple graphs.	
Applying: Students are able to answer questions from simple graphs.	• Which group on the graph has the most?
Developing: Students are able to answer questions of "how many" using numbers 1-3.	
Introducing: Students are able to indicate "all gone" and "more".	

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard
1.S.2.1. Students are able to recognize whether the outcome of a simple event is possible or impossible.

Extended Content
1.A.S.2.1. Students are able to recognize the outcome of a simple event with a yes or no probability.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able predict the outcomes of a simple event.	
Applying: Students are able to recognize the outcome of a simple event with a yes or no probability.	• When shown a spinner of blue and red, what is the probability that yellow will be the result most
Developing: Students are able to apply knowledge of previous event to change current outcome.	
Introducing: Students are able to respond to daily events.	**Example:** "Will we have lunch today?"

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 2

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

Note: Second grade students do not master standards for Indicator 1. Mastery of this indicator emerges and increases from grade 3 upward.

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
2.A.2.1. Students are able to use concepts equal to, greater than, and less than to compare numbers (0-100).

Extended Content
2.A.A.2.1. Students are able to use concepts of equal to, greater than, and less than to compare numbers (0-20).

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to demonstrate the concept of equal to, greater than, and less	• Demonstrate understanding of equal to: 4 red counters = 4 blue counters

than.	• Greater than: 4 red counters are greater than 3 blue counters • Less than: 3 blue counters are less than 4 red counters
Applying: Students are able to use concepts of equal to, greater than, and less than to compare numbers (0-20).	• Equal to: Use 2 apples = to 2 bananas • Greater than: 3 apples are greater than 2 bananas • Less than: 2 bananas are less than 3 apples • Comparing numbers: Use a number line to indicate greater than/less than
Developing: Students are able to identify concepts of greater than, and less than.	• Shown two bananas, the student identifies which is the greater in size. • Show two glasses of milk student will identify which one has less milk.
Introducing: Students are able to demonstrate wanting more.	• Making eye contact – (head up) • Verbal sounds • Movement of arms

General Education Standard
2.A.2.2. Students are able to solve open addition and subtraction sentences with one unknown (☐) using numbers equal to or less than 20.

Extended Content
2.A.A.2.2. Students are able to solve open addition and subtraction sentences with one unknown (☐) using numbers equal to or less than 10.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to write basic number sentence in addition and subtraction of numbers to 10.	• Addition: 3 cats and 4 dogs equal 7 animals in all. • Subtraction: 5 birds on a branch, 3 flew away, how many are left.
Applying: Students are able to solve open addition and subtraction sentences with one unknown (☐) using numbers equal to or less than 10. *(continued on next page)*	• Addition: 1. Use manipulatives to show 2 + __ = 3 2+2= __ • Subtraction 1. Use manipulatives to show 3 - __ = 1 • Unknown = ____
Developing: Students are able to identify one more than one in groups of 2.	• Set of 2 and a set of 3, have student identify which set has one more
Introducing: Students are able to identify one.	• Respond to visual cue by raising hand for

	yes or no
General Education Standard **2.A.2.3. Students are able to balance simple addition and subtraction equations using sums up to 20.** **Extended Content** **2.A.A.2.3. Students are able to solve simple addition and subtraction problems using sums up to 10.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to solve simple number sentences.	• Without using counters or manipulatives solve addition and subtraction problems
Applying: Students are able to use solve simple addition and subtraction problems using sums up to 10.	• Use counters or manipulatives to solve addition and subtraction problems
Developing: Students are able to solve simple addition problems using sums up to 3.	• Using counters work with the student to show 1 + 1 + 1 = 3; 2 + 1 = 3; 3 + 0 = 3
Introducing: Students are able to identify one and one more	• Using 2 sets of toys (1 set of 1; 1 set of 2) have student move one more toy to the set of 1 to make it equal to set of 2

Indicator 3: Interpret and develop mathematical models.

General Education Standard **2.A.3.1 Students are able to write and solve number sentences from word problems.** **Extended Content** **2.A.A.3.1 Students are able to solve number sentences from simple word problems using manipulatives.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to solve simple number sentences.	
Applying: Students are able to solve number sentences from simple word problems using a manipulatives.	**Example:** 1. 3 teddy bears + 2 teddy bears = 5 teddy bears
Developing: Students are able to add one to a set using a manipulatives.	• Using 2 sets of teddy bears with 1 set of 2 and 1 set of 3, have student move 1 more teddy bear to set of 2 to make it equal to set

	of 3
Introducing: Students are able to copy adding one to a set using manipulatives.	• Using 2 sets of teddy bears with 1 set of 2 and 1 set of 3, move 1 more teddy bear to set of 2 to make it equal to set of 3 then have the student do the same

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard
2.A.4.1. Students are able to find and extend growing patterns using symbols, objects, and numbers.

Extended Content
2.A.A.4.1. Students are able to find and extend ABC patterns using objects.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to construct/create an ABC pattern using objects.	
Applying: Students are able to find and extend ABC patterns using objects.	• Yellow-Red-Blue (M&Ms) Show pattern as YRB, YRB, have student continue pattern.
Developing: Students are able to copy a model of an AB pattern.	
Introducing: Students are able to imitate a simple pattern in the context of play.	• Pat-a-cake

General Education Standard
2.A.4.2 Students are able to determine likenesses and differences between sets.

Extended Content
2.A.A.4.2 Students are able to determine likeness between sets.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to determine likeness and difference between sets.	
Applying: Students are able to determine	• Given a set o blue teddy bears and blue

likeness between sets.	dinosaurs, what is the same
Developing: Students are able to group like sets.	• Books/Crayons
Introducing: Students are able to identify like groups.	• Show two groups of objects (fruit, toys), show student a fruit and ask "Which group does the fruit belong to?")

GEOMETRY

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
2.G.1.1. Students are able to use the terms side and vertex (corners) to identify plane and solid figures.

Extended Content
2.A.G.1.1. Students are able to use the terms sides and corners to identify plane figures.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to read, write and speak the basic language of geometry.	• Given a diagram of a square, the student will label the parts. • Given a diagram of a cube, the student will label the parts.
Applying: Students are able to use the terms sides and corners to identify plane figures.	• Shown a square student will identify the sides and the number of sides.
Developing: Students are able to sort cubes and spheres.	• Give an assortment of cubes and spheres the student will sort according to shape.
Introducing: Students are able to play with 3-D figures.	• Give the student a set of 3-d figures to play with.

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
2.G.2.1. Students are able to identify geometric figures regardless of position and orientation in space.

Extended Content
2.A.G.2.1. Students are able to identify plane figures (square, circle, triangle, rectangle) regardless of position in space.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify and compare plane and solid figures regardless of position in space.	• Given a basket of plane and solid figures, the student will sort accordingly.
Applying: Students are able to identify plane figures (square, circle, triangle, and rectangle) regardless of position in space.	• Given a platter of crackers (Ritz, Club, Triangular Triscuits/Wheat Thins, and Saltine) the student will sort according to shape. When correct sort is made student may eat.
Developing: Students are able to identify circles and squares.	• Given an orange slice, banana slice, a square slice of cheese, and a square shaped cracker, the student will identify the correct shape, and, if correct, may eat the shape.
Introducing: Students are able to match a shape regardless of position in space.	• Using solid geometric shapes (Tupperware shape sorter) students will manipulate figures to desired position in space.

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
2.M.1.1. Students are able to tell time to the minute using analog and digital clocks and relate time to daily events.

Extended Content
2.A.M.1.1. Students are able to tell time to the hour using analog and digital clocks and relate time to daily event.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to tell time to the half hour.	• When the clock shows 3:30, school is dismissed.
Applying: Students are able to tell time to the hour using analog and digital clocks and relate time to daily event.	• When the clock shows 10:00 it is PE time. • Analog/digital clock: Student will identify the various types of clocks. • Hour time: Student will be able to determine we go to lunch at 12:00.
Developing: Students are able to name the object that tells the time.	• Identify the clock by name.
Introducing: Students are able to indicate verbally or non-verbally the object that tells time.	• When asked to identify the object that tells time the student will indicate the clock by: 1. Naming the clock 2. Pointing to the clock 3. Moving eyes to the clock 4. Answering a yes or no with head nod or hand movement

General Education Standard
2.M.1.2. Students are able to use the calendar to solve problems.

Extended Content
2.A.M.1.2. Students are able to use calendar to identify days of week.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to read a calendar to tell month, day, and year.	• Read a calendar.
Applying: Students are able to use calendar to identify days of week	• The student will be asked to identify the day of the week.
Developing: Students are able to locate the calendar in the classroom.	• When asked to locate the calendar the student will show understanding by : 1. Pointing to the calendar 2. Moving to the calendar 3. Looking at the calendar
Introducing: Students are able to recognize a routine in their day.	• Student will recognize the movement from the classroom to PE, Music, Art, Library, Recess, and Lunch.

General Education Standard
2.M.1.3 Students are able to determine the value of a collection of like and unlike coins with a value up to $1.00.

Extended Content
2.A.M.1.3 Students are able to recognize the coin and value of a penny, nickel, dime, quarter, and dollar.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify one penny is 1 cent, one nickel is 5 cents and one dime is 10 cents.	• Given three items labeled with money value(items valued at one cent, five cents, and ten cents), the students will demonstrate which coin will purchase the each item.
Applying: Students are able to recognize the coin and value of a penny, nickel, dime, quarter, and dollar.	• Given a set of coins and 1 dollar bill, the student will identify the penny, nickel, dime, quarter, and dollar in the set and value.
Developing: Students are able to represent and write the value of penny, nickel, dime and quarter using the "¢" and a dollar using the "$" sign.	• Given a set of 3 coins, the student will identify the penny, nickel, and dime in the set.
Introducing: Students are able to manipulate coins.	• Students will play with a variety of play coins to simulate purchasing.

General Education Standard
2.M.1.4 Students are able to represent and write the value of money using the "¢" sign and in decimal form using the "$" sign.

Extended Content
2.A.M.1.4 Students are able to represent and write the value of penny, nickel, dime and quarter using the "¢" and a dollar using the "$" sign.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to write the value of a combination of pennies, nickels, dimes (76¢).	• Given a combination of coins, the student will count and give the value in written form using the cent sign and/or the dollar sign
Applying: Students are able to represent and write the value of penny, nickel, dime and	• Given four pennies the student will count the pennies and write the value using the

quarter using the "¢" and a dollar using the "$" sign. (76¢ or $2)	cent sign • Given a dollar, the student will indicate the value of the dollar and write it using the dollar sign
Developing: Students are able to recognize the value of a penny, nickel, dime as money.	• The student will show one penny and indicate its value as one cent • The student will show one nickel and indicate its value as five cents
Introducing: Students are able to manipulate coins.	• Play with a variety of coins

General Education Standard
2.M.1.5. Students are able to use whole number approximations for capacity using non-standard units of measure.

Extended Content
2.A.M.1.5. Students are able to use whole numbers up to 20 to determine the approximations for capacity using non standard units of measure.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use whole numbers to determine the approximations for capacity using non standard units of measure.	• Shown a gallon container, with tennis balls as the unit of measure, the student will determine approximately how many units will fit in the gallon container.
Applying: Use whole numbers up to 20 to determine the approximations for capacity using non standard units of measure.	• How many jelly bears will fit in the baby food jar.
Developing: Arrange objects according to heights.	• Given a set of stackable dolls, the student will arrange the dolls according to height.
Introducing: Students are able to put objects in a container.	• Given a group of teddy bear counters, the student will put them into a container.

General Education Standard
2.M.1.6. Students are able to solve everyday problems by measuring length to the nearest inch or foot.

Extended Content
2.A.M.1.6 Students are able to solve everyday problems by measuring length to the nearest foot.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to measure length of object using standard measurement.	• The student will use a ruler to measure the length of his desk. • The student will use a pencil to measure the length of his desk.
Applying: Students are able to solve everyday problems by measuring length to the nearest foot.	• Using a ruler, the student will measure the distance in feet between his desk and the teacher's.
Developing: Students are able to arrange objects according to height.	
Introducing: Students are able to take a movement to a given object.	• The student will indicate movement towards a given object by: 1. Walking towards it. 2. Using their wheelchair for movement 3. Looking at object and indicate wanting to move by hand motion. 4. Nodding to indicate wanting to move towards object

General Education Standard
2.M.1.7. Students are able to locate and name concrete objects that are about the same length, height, weight, capacity, and temperature as a given concrete object.

Extended Content
2.A.M.1.7. Students are able to locate and name concrete objects that are about the same length and height as a given concrete object.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to measure objects that are about the same length and height as a given concrete object.	• Given a tissue box, the students will compare the length and height to the objects from inside their desks.
Applying: Students are able to locate and name concrete objects that are about the same length and height as a given concrete object.	• The divider in our room is the same height as the book shelf. • The pencil box is the same length as the tissue box.
Developing: Students are able to compare self to a given object to determine taller or shorter.	• Have student compare self to teacher.
Introducing: Students are able to demonstrate so big with assistance (therapy).	

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
2.N.1.1 Students are able to read, write, count, and sequence numerals to 100.

Extended Content
2.A.N.1.1 Students are able to read, write, count and order to 25.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to sequence and add numbers up to 50.	• Given four numbers from 1-50, the student will sequence the numbers from smallest to largest. • Given two numbers between 1-50, the student will compare the larger/smaller.
Applying: Students are able to read, write, count and order to 25.	• Read, write, and/or count correctly in order from one to twenty five.
Developing: Students are able to count and read to 20.	• The teacher will model the number of objects and the student will display the identical amount.
Introducing: Students are able to count to 18.	

General Education Standard
2.N.1.2. Students are able to identify and represent fractions as parts of a group.

Extended Content
2.A.N.1.2. Students are able to identify and represent one half, one quarter as parts of a whole.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify and write fractions as part of a whole.(1/2 and 1/4).	• Identify a whole apple. • Identify 1/2 an apple.

	• Identify 1/4 an apple.
Applying: Students are able to identify and represent one half, one quarter as parts of a whole.	• Use pizza puzzle to identify 1/2 or 1/4 of pizza.
Developing: Students are able to recognize a whole object.	• Given a whole apple and a half of an apple, the student will indicate the whole apple.
Introducing: Students are able to create a whole object by using 2 parts.	• Given two part puzzles, the student will create the whole picture.

Indicator 2: Apply number operations within the set of real numbers.

General Education Standard
2.N.2.1 Students are able to solve two-digit addition and subtraction problems written in horizontal and vertical formats using a variety of strategies.

Extended Content
2.A.N.2.1 Students are able to solve addition and subtraction problem to 18.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to add and subtract one- and two-digit numbers.	• Add 9 + 5 to get an answer of 14. • Subtract 18 – 5 to get an answer of 13.
Applying: Students are able to solve addition and subtraction problem to 18.	• Fact families to 18 using a variety of strategies-manipulatives, number line, Touch Math.
Developing: Students are able to model one more than 2.	• Given two toys the student will model three toys by adding one more toy to the pile.
Introducing: Students are able to model more than one.	• Given toys the student will add one more toy to the pile.

Indicator 3: Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.

General Education Standard
2.N.3.1. Students are able to solve addition and subtraction problems up to 100 in context.

Extended Content
2.A.N.3.1. Students are able to solve addition and subtraction problems up to 10.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve and write addition and subtraction problems in horizontal and vertical format up to 10.	• Read horizontal problem and write it vertically to solve. • 6 + 3 =9 Change to vertical format.
Applying: Students are able to solve addition and subtraction problems up to 10.	
Developing: Students are able to model sums up to 5 using one to one correspondence.	• The teacher will model the number objects and the student will display the identical amount.
Introducing: Students are able to manipulate more than one.	

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
2.S.1.1. Students are able to use interviews, surveys, and observations to gather data.

Extended Content
2.A.S.1.1. Students are able to use interviews to gather data.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to gather and represent data for a graph.	• Ask others in the room what they ate for breakfast and construct an appropriate graph.
Applying: Students are able to use interviews to gather data.	• Ask other students what is their favorite pet.
Developing: Students are able to gather data by asking "why" or "what."	
Introducing: Students are able to sort and compare objects.	

General Education Standard
2.S.1.2. Students are able to represent data sets in more than one way.

Extended Content
2.A.S.1.2. Students are able to use data in interview to complete graph and tables.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to interpret data to solve a graph.	
Applying: Students are able to use data in interview to complete graph and tables.	• Chart the pets data onto a graph or table.
Developing: Students are able to use real objects to create a graph with assistance.	
Introducing: Students are able to manipulate objects in daily play.	

General Education Standard
2.S.1.3. Students are able to answer questions about and generate explanations of data given in tables and graphs.

Extended Content
2.A.S.1.3. Students are able to answer simple questions about data given in graphs and tables.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to differentiate data in a given graph.	
Applying: Students are able to answer simple questions about data given in graphs and tables *(continued on next page)*	• Are there more cats or dogs?
Developing: Students are able to answer simple "which" or "what" questions.	
Introducing: Students are able to indicate self when asked.	

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard
2.S.2.1. Students are able to list possible outcomes of a simple event and make predictions about which outcome is more or less likely to occur.

Extended Content
2.A.S.2.1. Students are able to list possible outcomes of a simple event.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to predict possible outcomes of a simple event.	
Applying: Students are able to list possible outcomes of a simple event.	• If we go on a picnic, what are the possible outcomes of the weather (windy, rainy, sunny, hot)?
Developing: Students are able to use pictorial cues to determine right or wrong.	• Looking at two picture of children playing, the student will determine which picture shows the right clothing for cold weather.
Introducing: Students are able to indicate yes or no answer.	

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 3

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Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

General Education Standard
3.A.1.1. Students are able to explain the relationship between repeated addition and multiplication.

Extended Content
3.A.A.1.1. Students are able to recognize, create, and extend pattern.

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to apply patterns to solve problems.	• Demonstrates techniques used in repeated addition. **Example:** 1. 4 + 4 + 4 = __ X 4 • Complete examples of patterns. • Use number patterns and relationships to solve problems.

Applying: Students are able to recognize, create, and extend patterns.	• Recognizes and creates a variety of sets and patterns using symbols. **Example:** 1. 1, 2, 3, 1, 2, 3, __, __, __ • Arranges sets of three to five objects and/or pictures to create patterns. **Example:** 1. Given a set of blocks, the student will independently create a pattern.
Developing: Students are able to recognize and create a pattern.	• Matches/Sorts attributes using objects or pictures. **Example:** 1. Money, socks/laundry, names to pictures (staff, students) • Matches identical simple pictures of objects. **Example:** 1. Matches money, socks, silverware, etc.
Introducing: Students are able to identify a pattern.	• Recognize and gaze at named objects. • Distinguish between simple attributes. • Uses same/different to describe objects or pictures. **Example:** 1. Small, medium, large, red, blue, green.

General Education Standard
3.A.1.2. Students are able to identify special properties of 0 and 1 with respect to arithmetic operations (addition, subtraction, multiplication).

Extended Content
3.A.A.1.2. Students are able to use the numbers 0 and 1 in addition, subtraction, and multiplication.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain the rules of 0 and 1 in addition, subtraction, and multiplication.	• Shows that any number plus or minus zero equals that number. • Shows that any number times one equals that number. • Shows that any number times zero equals zero.

Applying: Students are able to use the numbers 0 and 1 in addition, subtraction, and multiplication.	• Applies/uses the zero and one in a problem situation with or without a calculator. • Uses addition 2 + 0 = 2 • Uses subtraction 4 – 0 = 4 • Uses multiplication 5 x 0 = 0, 1 x 3 = 3
Developing: Students are able to use the numbers 0 and 1 in addition and subtraction.	• Applies/uses the zero and one in a problem situation with or without a calculator. • Uses addition 2 + 0 = 2 • Uses subtraction 4 – 0 = 4
Introducing: Students are able to use the numbers 0 and 1 in addition.	• Indicate desire for one additional item. • Uses addition 2 + 0 = 2 with or without objects.

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
3.A.2.1. Students are able to select appropriate relational symbols (<, >, =) to compare numbers.

Extended Content
3.A.A.2.1. Students are able to recognize relational symbols (<, >, =).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to apply relational symbols (<, >, =) to compare numbers.	• Identifies which is more, less, or equal when given two sets of numbers. • Use <, >, = to compare numbers.
Applying: Students are able to recognize relational symbols (<, >, =).	• Uses concepts of greater than, less than to compare numbers and sets. • Identifies symbols used in common situations. • Use concrete materials to model and solve equations.
Developing: Students are able to use concepts of equal to, greater than, and less than to compare numbers.	• Indicate an amount is the same or different. **Example:** 1. Food, measuring systems • Identifies which is more, less or equal when given two sets of numerals and/or objects. **Example:** 1. 4>3

Introducing: Students are able to use manipulatives to demonstrate the concepts of equal to, greater than, and less than.	• Compares sets of objects to determine more, less or equal. **Example:** 1. uses various objects to show more • Shows understanding of comparative words to describe objects or pictures. **Example**: 1. Bigger, Smaller, Same

General Education Standard
3.A.2.2. Students are able to solve problems involving addition and subtraction of whole numbers.

Extended Content
3.A.A.2.2. Students are able to solve problems involving addition and subtraction of whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create and solve problems involving addition and subtraction.	• Uses +, - and = symbols to write number sentences and solve problems. • Identifies key terms in word problems to determine the correct operation and solve the problem. • Identifies problem situations that require addition and subtraction.
Applying: Students are able to solve problems involving addition and subtraction of whole numbers.	• Identifies the meaning of +, -, and = signs. • Solves addition and subtraction problems using number lines.
Developing: Students are able to recognize plus or minus symbols.	• Uses + or – manipulatives. • Identifies the meaning of + and – signs.
Introducing: Students are able to use manipulative to demonstrate that addition is adding more and subtraction is taking away.	• Uses concrete materials to model and solve equations. • Imitate using materials to solve equations. • Removes objects from a set of objects and indicates number remaining. • Joins two sets together and identifies the total number.

Indicator 3: Interpret and develop mathematical models.

General Education Standard
3.A.3.1. Students are able to use the relationship between multiplication and division to compute and check results.

Extended Content
3.A.A.3.1. Students are able to develop relationships between inverse operations using manipulatives.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to develop and explain relationships between inverse operations using manipulatives.	• Follows multiple steps to solve a problem. • Independently checks for accuracy after completing a task. • Identify appropriate properties to solve problems.
Applying: Students are able to develop relationships between inverse operations using manipulatives.	• Solves a one-step problem. • Divides a given set of objects into equal groups. • Checks for accuracy after completing a task when prompted.
Developing: Students are able to manipulate pictures and objects to create sets and make comparisons between sets.	• Follows simple two-step directions. **Example:** 1. Written cues for steps in a math problem. • Manipulate pictures and objects into sets.
Introducing: Students are able to match objects to create sets.	• Follows simple one-step directions. • Problem solves that they need help.

Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.

General Education Standard
3.A.4.1. Students are able to extend linear patterns.

Extended Content
3.A.A.4.1. Students are able to extend linear patterns.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create linear patterns.	• Create and explain a simple addition or subtraction pattern. • Charts data to solve problems or complete a task.

Applying: Students are able to extend linear patterns.	• Graphs, plots, or marks numbers on a number line. • Extend a simple multiplication or symbolic pattern.
Developing: Students are able to tell what is missing from a pattern.	• Locates a specific item within a given pattern. • Charts simple data **Example:** 1. Tallies, attendance • Identifies symbols to understand charts/graphs **Example:** 1. Chart/table key
Introducing: Students are able to copy a pattern.	• Follows a patterned response **Example**: lines up at door, raises hands, sharpens pencil • Recreates manipulatives patterns **Example:** 1. Unifix cubes, parquetry, tangrams 2. Enters a number sequence into a key pad. • Responds to yes or no questions and to problems presented pictorially or numerically in class.

General Education Standard
3.A.4.2. Students are able to use number patterns and relationships to learn basic facts.

Extended Content
3.A.A.4.2. Students are able to use number patterns and relationships to learn basic facts.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create number patterns using basic facts.	• Identify different patterns on the hundreds chart. • Skip count two's by five's and 10's at least up to 50.
Applying: Students are able to use number patterns and relationships to learn basic facts.	• Skip count by two's. • Group manipulatives by five's and ten's. • Extend a simple multiplication or symbolic pattern.
Developing: Students are able to identify and create a pattern using familiar objects.	• Student will imitate putting manipulatives into sets of twos, threes, and fours.

Introducing: Students are able to reproduce a pattern.	• Student will imitate putting manipulatives into sets of two's. • Recreates manipulatives patterns. **Example:** 1. unifix cubes, Legos, puzzle • Copy/reproduce a pattern with 1:1 correspondence using manipulatives, matching a model.

Geometry

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
3.G.1.1. Students are able to recognize and compare the following plane and solid geometric figures: square, rectangle, triangle, cube, sphere, and cylinder.

Extended Content
3.A.G.1.1. Students are able to recognize and sort geometric shapes: square, circle, triangle, and rectangle.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare geometric shapes: square, circle, triangle.	• Describes the six basic shapes. (circle, square, triangle, rectangle, ellipse, diamond) • Match more complex shapes by pattern.
Applying: Students are able to recognize and sort geometric shapes: square, circle, triangle, and rectangle.	• Names the four basic shapes. (circle, square, triangle, rectangle) • Identify difference between plane and solid figures. **Example:** The difference between a ball and circle.
Developing: Students are able to match rectangle, circle, and square of different size and color.	• Names shapes of environmental objects. (Stop sign, party hat, soup cans, balls.) • Matches similar shapes of different size and color.
Introducing: Students are able to match simple two-dimensional shapes. *(continued on next page)*	• Matches basic shapes. **Examples:** 1. Circle, square, triangle, rectangle

	2. Sorts blocks, pegs, cubes, and spheres. 3. Match shapes with corresponding symbols and shapes in the environment. 4. stop sign

General Education Standard
3.G.1.2. Students are able to identify points, lines, line segments, and rays.

Extended Content
3.A.G.1.2. Students are able to identify points, lines, line segments, and rays.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create lines, line segments, and rays.	• Draws horizontal lines, vertical lines, and plus sign independently without demonstration. • Identifies an angle as part of a shape. • Identify parallel, perpendicular, and intersecting lines.
Applying: Students are able to identify points, lines, line segments, and rays.	• Identify line segments. • Identify rays. • Draws horizontal lines, vertical lines, and plus sign independently with demonstration.
Developing: Students are able to create a line segment by connecting two points.	• Students will identify lines. • Draws a line.
Introducing: Students are able to identify points.	• Identify points. • Connects dots with lines.

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
3.G.2.1. Students are able to demonstrate relationships between figures using similarity and congruence.

Extended Content
3.A.G.2.1. Students are able to identify similarities and differences between geometric figures.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain similarities and differences between geometric figures.	• Identify congruent and similar shapes using key vocabulary. **Example**: Congruent triangles • Defines shapes by number of sides and corners.
Applying: Students are able to identify similarities and differences between geometric figures.	• Categorizes shapes by attributes. • Matches pairs of similar shapes, but of different sizes.
Developing: Students are able to match and sort similar figures.	• Match similar shapes of different size and color. • Sort similar shapes of different size and color.
Introducing: Students are able to recognize similar figures.	• Trace, draw, or match shapes. • Match and sort simple congruent shapes. • Recognizes community signs by shape, color, and symbol.

Measurement

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
3.M.1.1. Students are able to read and tell time on an analog clock before the hour and after the hour within five-minute intervals.

Extended Content
3.A.M.1.1. Students are able to read and tell time on an analog clock to the nearest hour.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to relate common events with specific times on the clock.	• Tell time to the hour on analog and digital clocks using a.m. and p.m. • Describe the schedule for a given school day in relation to times on the clock. **Example**: 1. Recess at 10:00 a.m. 2. Lunch at 12:00 p.m.
Applying: Students are able to read and tell time on an analog clock to the nearest hour.	• Match digital time to analog time.

Developing: Students are able to recognize hour and minute hands.	• Identify analog and digital clocks. • Recognize that certain activities occur at certain times.
Introducing: Students are able to recognize the difference between morning, afternoon, and night.	• Identify clocks as a measurement of time. • Identify numbers on a clock. • Use picture-based schedules to manage time throughout the day.

General Education Standard
3.M.1.2. Students are able to count, compare, and solve problems using a collection of coins and bills.

Extended Content
3.A.M.1.2. Students are able to identify and name the value of a dollar, quarter, dime, nickel, and penny.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare the values of quarter, dime, nickel, and penny.	• Demonstrates equivalent amounts of money. **Example**: 1. 5 pennies = 1 nickel • Recognizes, reads and writes prices of items. • Order coins by values. **Example**: 1. A quarter is more than a dime. 2. A penny is less than a nickel.
Applying: Students are able to identify and name the value of a dollar, quarter, dime, nickel, and penny.	**Example** 1. Quarter = twenty-five cents 2. Dime = ten cents 3. Nickel = five cents 4. Penny = one cent
Developing: Students are able to identify quarter, dime, nickel, and penny.	• Identify money as the measurement of an item's price. • Give the requested coin.
Introducing: Students are able to sort quarter, dime, nickel, and penny.	• Match coins by size and other attributes.

General Education Standard
3.M.1.3. Students are able to identify U.S. Customary units of length (feet), weight (pounds), capacity (gallons).

Extended Content
3.A.M.1.3. Students are able to identify U.S. Customary tools for measuring length (feet), weight (pounds), and capacity (gallons).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to classify tools for measuring length (feet), weight (pounds), and capacity (gallons).	• Chose appropriate measurement tools for given situations. • Correlate linear measurement to numerical representation. **Example**: 1. 5 feet = 5’
Applying: Students are able to identify U.S. Customary tools for measuring length (feet), weight (pounds), and capacity (gallons).	• Identify measurement tools. **Example**: 1. Feet = ruler 2. Weight = scale 3. Capacity = measuring cup
Developing: Students are able to compare familiar objects by size, weight, and capacity.	• Independently sort objects by size, weight, and capacity. • Order objects by size, weight, and capacity.
Introducing: Students are able to sort familiar objects by size and weight.	• Points to the smaller/larger of two different objects. • Determines the concept of long/short, big/tall. • Determines appropriate sizes for clothing or shoes.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
3.M.1.4 Students are able to select appropriate units to measure length (inch, foot, mile, yard); weight (ounces, pounds, tons); and capacity (cups, pints, quarts, gallons).

Extended Content
3.A.M.1.4 and 3.A.M.1.5 Students are able to identify the appropriate measurement tools in the standard system.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to select and use the appropriate measurement tools in the	• Make estimates of measurement and use measurement tools to determine

standard system.	measurements. • Apply measurement concepts and tools to solve problems involving length, volume, weight.
Applying: Students are able to identify the appropriate measurement tools in the standard system.	• Recognize measurement tools used in various situations. **Example:** 1. Ruler to measure book 2. Cup to measure water
Developing: Students are able to measure common objects.	• Correlate linear measurement to numerical representation. **Example**: 1. 5 feet = 5' • Will recognize and use basic measurement terms. **Example**: 1. Feet, inches, pounds.
Introducing: Students are able to recognize measurement tools.	• Identifies a named tool.

Number Sense

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
3.N.1.1. Students are able to order and compare whole numbers less than 10,000 using appropriate words and symbols.

Extended Content
3.A.N.1.1. Students are able to read, write, count, and order whole numbers to 100.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare numerals to 100.	• Compares numbers in relation of amount.
Applying: Students are able to read, write, count, and order whole numbers to 100.	• Identify the value of each digit in numbers to 100. • Writes random numbers from dictation.

	• Identifies/points to/names numerals out of sequence.
Developing: Students are able to read and count numerals to 100.	• Locates a page in book using page numbers. • Identify numerals
Introducing: Students are able to count to 50.	• Groups objects by number into container. • Begin to count, group, sort, and match quantities of numbers. • Use the 'language' of numbers. • Demonstrate one-to-one correspondence between objects.

General Education Standard
3.N.1.2. Students are able to find multiples of whole numbers 2, 5, and 10.

Extended Content
3.A.N.1.2. Students are able to count by ones, fives, and tens.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create patterns using skip counting to solve problems.	**Example:** tree set of five apples is how many apples? 5+5+5= 15
Applying: Students are able to count by ones, fives, and tens.	• Independently count by ones, fives, and tens.
Developing: Students are able to counts by ones and fives.	• Use manipulatives to count sets of fives.
Introducing: Students are able to counts by ones.	• Count manipulatives.

General Education Standard
3.N.1.3. Students are able to name and write fractions from visual representations.

Extended Content
3.A.N.1.3. Students are able to identify and represent one half and one quarter as parts of a whole.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to name and write fractions from visual representation.	• Identify shaded parts of a whole written as a fraction. **Example**: 1/2, 1/4, 1/3. • Demonstrates an understanding of proportional relationships. **Example**: 1/2 of pizza is larger than 1/4
Applying: Students are able to identify and represent one half and one quarter as parts of a whole.	• Identify parts of each set of fractions in written format. • Split object into appropriate number of pieces to represent a given fraction. **Example**: Divide a circle in two pieces to represent 1/2.
Developing: Students are able to recognize wholes, halves and quarters.	• Split groups of objects into one, two, or four equal parts.
Introducing: Students are able to manipulate up to four parts of an object to assemble a whole.	• Manipulates objects to make two objects from one. **Example**: Whole pizza cut in half • Interlocks puzzle pieces to create whole picture.

Indicator 2: Apply operations within the set of real numbers.

General Education Standard
3.N.2.1. Students are able to add and subtract whole numbers up to three digits and multiply two digits by one digit.

Extended Content
3.A.N.2.1. Students are able to add and subtract whole numbers to two digits.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to add and subtract two digit whole numbers with regrouping.	**Example:** 1. Carrying 2. Borrowing
Applying: Students are able to add and subtract whole numbers to two digits.	• Add and subtract whole numbers to two digits without regrouping.
Developing: Students are able to subtract one digit numbers.	• Demonstrates an understanding of subtraction as taking away from a collection. • Translates written number to a set of objects, combine sets of objects, count objects**.** • Connects symbols to operations.

Introducing: Students are able to add one digit numbers.	• Demonstrates an understanding of addition as adding to a collection. • Demonstrates understanding of some/more/take away/all gone/no more. • Adds on digit numbers in vertical or horizontal form with or without manipulatives.

Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.

General Education Standard
3.N.3.1. Students are able to round two-digit whole numbers to the nearest ten and three-digit whole numbers to the nearest hundred.

Extended Content
3.A.N.3.1. Students are able to round two-digit whole numbers to the nearest tens.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare estimates to actual answers.	• Uses rounding strategies to make estimates. • Chooses whether an estimate or exact amount is needed in a given situation.
Applying: Students are able to round two-digit whole numbers to the nearest tens.	• Using a number line, round two-digit whole numbers to the nearest ten. **Example**: 1. 26 rounds to 30
Developing: Students are able to identify place value to tens.	• Use manipulatives to build models of numbers. **Example**: two tens and three ones = 23
Introducing: Students are able to recognize the difference between an estimate and an exact amount.	• Identify the full set and the set that is nearly full.

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
3.S.1.1. Students are able to ask and answer questions from data represented in bar graphs, pictographs, and tally charts.

Extended Content
3.A.S.1.1. Students are able to answer simple questions from data represented in a graph.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create a graph from gathered data.	• Represents data sets in more than one way. **Example:** Sorting, charts, line graph, bar graphs • Labels data accurately **Example:** Knows categories, categorizes collected data
Applying: Students are able to answer simple questions from data represented in a graph.	• Responds to yes or no questions and to problems presented pictorially or numerically in class. **Example:** Do more kids like the color blue. • Uses comparison words to describe the elements of a collection/group. **Example:** larger, fewer, more, less, etc
Developing: Students are able to gather data on familiar objects.	• Make observations of gathered objects. • Places a symbol or concrete object in the correct position on a graph.
Introducing: Students are able to collect, sort, and organize objects by different characteristics.	• Access assistive technology to display computer images. • Gather data on familiar objects.

General Education Standard
3.S.1.2. Students are able to gather data and use information to complete a scaled and labeled graph.

Extended Content
3.A.S.1.2. Students are able to identify data on a graph, table, or chart.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to analyze data on a graph, table, or chart.	• Reads and applies information from bar graphs and pictographs to answer mathematics questions using concepts of largest, smallest, most often, and middle.

Applying: Students are able to identify data on a graph, table, or chart.	• Responds to yes or no questions and to problems presented pictorially or numerically in class. **Example:** Do more kids like the color blue? • Uses comparison words to describe the elements of a collection/group. **Example:** Larger, fewer, more, less, etc
Developing: Students are able to label parts of a graph, table, or chart.	• Labels data accurately. **Example:** labeling axis' correctly, knows categories.
Introducing: Students are able to identify parts of a graph, table, or chart.	• Use eye gaze or other means to identify requested sections on a graph. **Example:** Title, numbers, specific data represented on the graph (pictures or symbols)

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard
3.S.2.1. Students are able to describe events as certain or impossible.

Extended Content
3.A.S.2.1. Students are able to identify events that are impossible by using concrete materials.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create a list of events that are certain or impossible.	• Student generated list of events that are possible or impossible.
Applying: Students are able to identify events that are impossible or possible by using concrete materials.	• Makes predictions about events/situations that are likely or certain. **Example:** • The sun rising every morning, choosing a yellow marble out of a bag of yellow marbles. • Makes predictions about events/situations that are not likely or impossible. **Example:** 1. Snowfall in August. 2. Choosing a blue marble from a bag of red marbles.

Developing: Students are able t o list possible causes of a simple event.	• Speculates on the cause when given an effect. **Example:** Band aid on finger – speculates an injury.
Introducing: Students are able to list possible outcomes of a simple event.	• Performs simple cause and effect experiments. **Example:** Uses electronic switch, simple machine, or other objects, pictures, and/or manipulatives. • Predicts the effect of the given cause. **Example:** If I touch a hot stove, I will get burned.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 4

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

General Education Standard
4.A.1.1. Students are able to simplify whole number expressions involving addition, subtraction, multiplication, and division.

Extended Content
4.A.A.1.1. Students are able to solve number sentences using whole numbers.

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to create and solve number sentences using whole numbers.	• Create and explain a pattern using simple addition and subtraction.
Applying: Students are able to solve number sentences using whole numbers.	• Solve simple number sentences using the four basic operations without a model.
Developing: Students are able t o solve addition and subtraction problems using a number line.	• Solve simple number sentences using the four basic operations with a model.
Introducing: Students are able to represent	• Solve simple addition and subtraction

and differentiate simple addition and subtraction number sentences using pictures, objects, and/or manipulatives.	number sentences using pictures, objects, and/or manipulatives. • Represent and differentiate simple addition and subtraction number sentences using pictures, objects, and/or manipulatives.

General Education Standard
4.A.1.2. Students are able to recognize and use the commutative property of addition and multiplication.

Extended Content
4.A.A.1.2. Students are able to use a model to identify commutative property of addition and multiplication.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain the commutative property of addition and multiplication.	• Recognizes and uses the commutative property of addition and multiplication. • Solve addition and multiplication problems using the commutative property of addition and multiplication.
Applying: Students are able to use a model to identify commutative property of addition and multiplication.	• Use models to solve a problem using the commutative property of addition and multiplication.
Developing: Students are able to solve addition problems.	• Demonstrates techniques used in addition. • Solve simple addition problems without a calculator.
Introducing: Students are able to understand that addition is adding to a group.	• Understand the term and corresponding symbol for addition. • Model adding more object(s) to a group using manipulatives.

General Education Standard
4.A.1.3. Students are able to relate the concepts of addition, subtraction, multiplication, and division to one another.

Extended Content
4.A.A.1.3. Students are able to show relationship between addition and subtraction.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare the	• Create and explain a pattern using simple

relationship between addition and subtraction.	addition and subtraction. **Example**: 1. Adding by twos, subtracting by threes. • Represent and differentiate simple addition and subtraction number sentences.
Applying: Students are able to show relationship between addition and subtraction.	• Represent and differentiate simple addition and subtraction number sentences using pictures, objects, and/or manipulatives. • Extend a pattern using simple addition and subtraction. **Example**: 1. Adding by twos, subtracting by threes.
Developing: Students are able to understand the terms and corresponding symbols for addition (+) and subtraction (-).	• Recognize the terms and corresponding symbols for addition and subtraction. • Describe and extend a pattern using pictures, words, numbers, and operations.
Introducing: Students are able to Match/manipulate pictures and objects to create sets and make comparisons between sets.	• Demonstrate techniques used in adding with manipulatives, objects, or pictures. • Demonstrate techniques used in subtracting with manipulatives, objects, or pictures. • Recognizes and creates a variety of sets.

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
4.A.2.1. Students are able to select appropriate relational symbols (<, >, =) to make number sentences true.

Extended Content
4.A.A.2.1. Students are able to use inequalities/equalities to compare numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to select appropriate symbols (<, >, =) to compare numbers.	• Solves simple problems involving inequalities and equalities. • **Example:** 1. 3 < 9 2. 5 = 5
Applying: Students are able to use inequalities/equalities to compare numbers.	• Identifies which is more, less, or equal when given two sets of numbers. • Uses concepts of greater than, less than to

	compare numbers and sets.
Developing: Students are able to understand terms and corresponding symbols for equal to, less than, and greater than.	• Recognizes comparative symbols (<, >, =) • Uses comparative words to describe differences between groups of objects or pictures.
Introducing: Students are able to compare sets of objects to determine more, less, or equal.	• Uses same/different to describe objects or pictures. • Recognize the meaning of more/bigger, less/fewer, and same.

General Education Standard
4.A.2.2. Students are able to simplify a two-step equation using whole numbers.

Extended Content
4.A.A.2.2. Students are able to determine the value of variables in simple equations.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create and solve a simple equation using variables.	• Writes and solves number sentences that represent word problems in addition and subtraction. • Identifies problem situations that require addition and subtraction.
Applying: Students are able to determine the value of variables in simple equations.	• Uses +, -, and = symbols to solve problems. • Solves one-step problems.
Developing: Students are able to solve a simple equation.	• Understand the terms and corresponding for addition and subtraction. • Solves addition and subtraction problems using number lines.
Introducing: Students are able to use concrete materials to model and solve simple equations.	• Joins two sets together and identifies the total number. • Removes objects from a set of objects and indicates number remaining.

Indicator 3: Interpret and develop mathematical models.

General Education Standard
4.A.3.1. Students are able to write and solve number sentences that represent one-step word problems using whole numbers.

Extended Content
4.A.A.3.1. Students are able to create number sentences that represent one-step word problems using whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve word problems by converting to algebraic statements.	• Write and solve number sentences that represent word problems. • Identifies problem situations that require addition or subtraction.
Applying: Students are able to create number sentences that represent one-step word problems using whole numbers.	• Create and solve simple number sentences using the basic operations of addition, subtraction, and multiplication without a model.
Developing: Students are able to give a number sentence, solve a one-step word problem.	• Solve simple number sentences using the basic operations of addition, subtraction, and multiplication with a model.
Introducing: Students are able to solve simple number sentences using the basic operations of addition, subtraction, and multiplication with a model.	• Solve simple addition and subtraction problems using concrete materials, pictures, and manipulatives.

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard
4.A.4.1. Students are able to solve problems involving pattern identification and completion of patterns.

Extended Content
4.A.A.4.1. Students are able to identify number patterns to solve simple problems.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve simple problems by creating number patterns.	• Create and explain a simple addition or subtraction pattern. • Describe a rule for given patterns.
Applying: Students are able to identify number patterns to solve simple problems.	• Create and explain a simple addition or subtraction pattern. • Describe a rule for given patterns.
Developing: Students are able t o identify and complete a number pattern.	• Tell what is missing in a pattern. Copy/reproduce a number pattern with 1:1 correspondence.
Introducing: Students are able to identify a number pattern.	• Copy/reproduce a pattern with 1:1 correspondence using manipulatives.

GEOMETRY

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

Grade 4
General Education Standard
4.G.1.1. Students are able to identify the following plane and solid figures: pentagon, hexagon, octagon, pyramid, rectangular prism, and cone.

Extended Content
4.A.G.1.1. Students are able to identify the following plane figures: pentagon, hexagon, and octagon.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create plane figures: pentagon, hexagon, and octagon.	• Identify, draw, and compare more complex shapes.
Applying: Students are able to identify the following plane figures: pentagon, hexagon, and octagon	• Recognize basic geometric figures.
Developing: Students are able t o recognize and name circle, rectangle, and triangle.	• Identifies and names circle, rectangle, and triangle.
Introducing: Students are able to match shapes with corresponding symbols and shapes in the environment.	• Match and sort similar shapes.

General Education Standard
4.G.1.2. Students are able to identify parallel, perpendicular, and intersecting lines.

Extended Content
4.A.G.1.2. Students are able to identify parallel and intersecting lines.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to draw parallel, perpendicular, and intersecting lines.	• Match right angles with familiar objects in the environment. • Describe and compare properties of a line

	or a pair of lines.
Applying: Students are able to identify parallel and intersecting lines	• Identify two lines that never meet as parallel. • Identify two lines that cross as intersecting.
Developing: Students are able to describe and draw a line.	• Draws a line independently. • Describe a line using appropriate terms. • Example: Point, line segment, line.
Introducing: Students are able to identify a line.	• Trace a line. • Connects two points to form a line.

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
4.G.2.1 Students are able to compare geometric figures using size, shape, orientation, congruence, and similarity.

4.G.2.2 Students are able to identify a slide (translation) of a given figure.

Extended Content
4.A.G.2.1. and 4.A.G.2.2. Students are able to sort and compare geometric figures using size, shape, and orientation.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare geometric figures using the terms congruent and similar.	• Reproduce a shape that is congruent or similar. • Draw and compare two dimensional shapes.
Applying: Students are able to sort and compare geometric figures using size, shape, and orientation. *(continued on next page)*	• Identify where an object is located in space relative to another object. • Identify where an object is located in space from their point of view.
Developing: Students are able to recognize that a shape remains the same shape when it changes position.	• Match pictures representative of common positional concepts. • Demonstrates positions of objects in space.
Introducing: Students are able to identify geometric figures.	• Compare two different simple shapes and describe what is the same. • Sort and identify simple shapes using one or more attributes.

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
4.M.1.1. Students are able to identify equivalent periods of time and solve problems.

Extended Content
4.A.M.1.1. Students are able to identify equivalent periods of time.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify equivalent periods of time and solve problems.	• Describe relationships among days, months, and years; hours and minutes; a.m. and p.m. to solve problems. **Example**: 1. If 12 months equal one year, how many months equal two years?
Applying: Students are able to identify equivalent periods of time.	• Describe relationships among days, months, and years; hours and minutes; a.m. and p.m. **Example**: 12 months equals one year.
Developing: Students are able t o identify parts of the day (e.g. morning, afternoon, evening), days of the week, and months of the year.	• Identify relationships among days, months, and years.
Introducing: Students are able to identify today/tomorrow/yesterday on a calendar	• Identify relationships among today, tomorrow, and yesterday.

General Education Standard
4.M.1.2. Students are able to solve problems involving money including unit conversion.

Extended Content
4.A.M.1.2. Students are able to count and compare collections of coins.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to count and compare collections of coins to solve problems.	• Uses a calculator to add money amounts to solve problems. • Demonstrates equivalent amounts of money.

	Example: 4 quarters = $1.
Applying: Students are able to count and compare collections of coins.	• Counts money of same values. • Example: counts nickels by fives. • Counts money of different values. **Example**: counts nickels, dimes, and quarters in mixed groups.
Developing: Students are able to identify, sorts, and names coins by their value.	• Sorts money of same value. • Identifies coins by their names.
Introducing: Students are able to identify coins.	• Names or points to specific coins when asked. (penny, nickel, dime, quarter) • Demonstrates knowledge of penny, nickel, dime, and quarter. • Sorts money by size.

General Education Standard
4.M.1.3. Students are able to use scales of length, temperature, capacity, and weight.

Extended Content
4.A.M.1.3. Students are able to use the U.S. Customary tools of length (feet), weight (pounds), and capacity (gallons).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to decide which U.S. Customary tools of length (feet), weight (pounds), and capacity (gallons) to use to solve problems	• Chooses appropriate measuring tool to measure an object to solve problems.
Applying: Students are able to use the U.S. Customary tools of length (feet), weight (pounds), and capacity (gallons).	• Chooses appropriate measuring tool to measure an object.
Developing: Students are able to describe the similarities between two pictures, objects, and/or manipulatives using measurement concepts.	• Using direct comparison, use descriptive language of measurement to compare two objects. • Identify familiar tools in the environment that are used for measurement.
Introducing: Students are able to compare familiar objects by size, weight, or other attributes involving measurement.	• Compare familiar objects by size, weight, or other attributes involving measurement.

General Education Standard
4.M.1.4. Students are able to measure length to the nearest quarter-inch.

Extended Content
4.A.M.1.4. Students are able to measure length to the nearest inch.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to measure length to the nearest 1/2 inch.	• Measure and compare common objects to the nearest ½ inch using English units of length measurement.
Applying: Students are able to measure length to the nearest inch.	• Measure and compare common objects to the nearest inch using English units of length measurement. • Using a ruler, measure an object using inches.
Developing: Students are able to identify the appropriate measurement tools in the standard system	• Given a situation requiring measurement, identify the correct measurement tool to use.
Introducing: Students are able to measure length using nonstandard units.	• Using direct comparison, use descriptive language of measurement to compare two objects. **Example**: The math textbook is longer than the pencil.

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
4.N.1.1. Students are able to read, write, order, and compare numbers from .01 to 1,000,000.

Extended Content
4.A.N.1.1. Students are able to read, write, order, and compare whole numbers from 1 to 100.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to calculate and solve problems involving addition and subtraction with numbers from 1 to 100.	• Identify the appropriate math operation in a simple problem situation, specifically add vs. subtract. **Example:** The student will be able to identify if more or less (a sum or difference) is needed.
Applying: Students are able to read, write, order, and compare whole numbers from 1 to 100.	• Says the number before and after a given number in a range. • Matches, identifies, and orders numerals 1 -10, 10 – 20.
Developing: Students are able t o read, write, and count numbers to 100.	• Writes random numerals from dictation. • Writes numerals in sequence to 100 with/without a model. • Matches and identifies numerals 1 -10, 10 – 20.
Introducing: Students are able to count to 100.	• Counts by ones. • Counts on from a given number.

General Education Standard
4.N.1.2. Students are able to find multiples of whole numbers through 12.

Extended Content
4.A.N.1.2. Students are able to count by twos, threes, fives, and tens.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to find multiples of whole numbers through 10.	• Group objects in sets up to ten.
Applying: Students are able to count by twos, threes, fives, and tens.	• Groups objects by multiples of twos, threes, fives, and tens. • Identifies multiples of twos, threes, fives, and tens on a number line.
Developing: Students are able to count by ones, fives, and tens.	• Identifies multiples of ones, fives, and tens on a number line. • Groups objects in sets of fives and tens.
Introducing: Students are able to count by ones and tens.	• Group objects by tens. • Circles multiples of ten on a number chart.

General Education Standard
4.N.1.3. Students are able to use a number line to compare numerical value of fractions or mixed numbers (fourths, halves and thirds).

Extended Content
4.A.N.1.3. Students are able to compare common fractions on a number line.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify improper fractions, proper fractions, and mixed numbers.	• Select, use, and explain models to relate common fractions and mixed numbers. • Identifies numerator and denominator.
Applying: Students are able to compare common fractions on a number line.	• Shows proportional relationships using manipulatives. **Example**: 1. ½ of a pizza is larger than ¼ • Identify and represent common fractions (1/2, 1/4, 1/3) as parts of wholes, parts of a collection, and as locations on a number line.
Developing: Students are able to identify and compare parts of a whole (quarters, thirds, halves) and determine relative size of each (1/2, 1/3, 1/4) using manipulatives.	• Splits objects into two, three, or four equal parts. • Divides a whole unit into a required number of parts. • Compares and orders common fractions using concrete materials. **Example**: ¼ to ½ of a cookie.
Introducing: Students are able to recognize wholes and halves	• Identifies if object is a whole or part of an object. • Manipulates objects to make 2 objects from 1. **Example**: Whole pizza cut in half. Splits objects into two parts.

General Education Standard
4.N.1.4. Students are able to interpret negative integers in temperature.

Extended Content
4.A.N.1.4. Students are able to recognize above and below zero temperatures on a thermometer.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to interpret negative integers on a thermometer.	• Read a thermometer and describe the characteristics of that temperature.
Applying: Students are able to recognize above and below zero temperatures on a thermometer.	• Identifies positive and negative intervals on a number line. • Find and position positive and negative integers on a number line
Developing: Students are able to recognize and read above zero temperatures on a thermometer.	• Identifies positive intervals on a number line. • Find and position positive integers on a number line.
Introducing: Students are able to recognize that a thermometer measures temperature.	• Recognizes the difference between hot and cold. • Distinguishes temperature differences in the seasons.

Indicator 2: Apply operations within the set of real numbers.

General Education Standard
4.N.2.1. Students are able to find the products of two-digit factors and quotient of two natural numbers using a one-digit divisor.

Extended Content
4.A.N.2.1. Students are able to apply the whole number system in multiplication.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recall multiplication facts through 9s.	• Identifies multiplication facts through 9s on a number chart.
Applying: Students are able to apply the whole number system in multiplication.	• Uses "x" and "=" to write number sentences and solve problems.
Developing: Students are able to use repeated addition to demonstrate the multiplication process.	• Illustrate the concept of multiplication by grouping equal number of objects. • Joins sets together and identifies the total number.
Introducing: Students are able to use concrete materials to combine equal sets of groups to show repeated addition.	• Combine objects into equal sets and counts total number of objects.

General Education Standard
4.N.2.2. Students are able to add and subtract decimals with the same number of decimal places.

Extended Content
4.A.N.2.2. Students are able to recognize decimals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare money amounts written with decimals.	• Select and use appropriate operations to solve problems involving money.
Applying: Students are able to write money as decimals with dollars and cents.	• Appropriately places decimal point and dollar sign. • Read and write decimals to hundredths.
Developing: Students are able to recognize and use decimals.	• Add decimals with the same number of decimal places. • Explain decimal numbers as parts of a whole.
Introducing: Students are able to recognize decimals.	• Copy numbers using decimals.

Indicator 3: Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.

General Education Standard
4.N.3.1. Students are able to estimate sums and differences in whole numbers and money to determine if a given answer is reasonable.

Extended Content
4.A.N.3.1. Students are able to use estimation in problem solving with a number line.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use estimates in whole numbers and money to determine if a given answer is reasonable.	• Estimate and solve problems involving addition and subtraction of two-digit numbers. • Compare estimations with actual calculations. • Evaluate the accuracy of estimation.
Applying: Students are able to use estimation in problem solving with a number line.	• Round to the nearest multiple of ten on a number line. • Order and compare a set of numbers based

	on value.
Developing: Students are able to compare estimations with exact answers.	• Provide an estimation of the number of objects in a group and determine if the correct answer is more, less, or same. • Choose whether an estimate or exact amount is needed in a given situation
Introducing: Students are able to round two digit numbers.	• Identify place value to tens. • Demonstrates place value by grouping objects by tens. • Forms sets of objects of up to ten.

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
4.S.1.1. Students are able to interpret data from graphical representations and draw conclusions.

Extended Content
4.A.S.1.1. Students are able to represent simple data in different formats.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to interpret data from graphical representations.	**Example:** 1. Bar graph 2. Line graph 3. Pictograph 4. Line plot
Applying: Students are able to represent simple data in different formats.	• Represents data sets in more than one way. **Example:** sorting, charts, line graph, bar graphs) • Labels data accurately **Example:** Knows categories. • Categorizes collected data.
Developing: Students are able to name the category that has the most, least, or the same on a graph.	• Responds to yes or no questions and to problems presented pictorially or numerically in class. **Example:** 1. Do more kids like the color blue? **2.** Uses comparison words to describe the elements of a collection/group. **Example:**

	1. Larger, fewer, more, less, etc
Introducing: Students are able to collect, match, and/or sort objects with similar characteristics.	• Access assistive technology to display computer images. • Gather data on familiar objects.

General Education Standard
4.S.1.2. Given a small ordered data set of whole number data points (odd number of points), students will identify the median, mode, and range.

Extended Content
4.A.S.1.2. Students are able to identify the median when given a small ordered data set of whole number data points (odd number of points).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify and use the median to solve simple problems.	• Given the set of numbers, 2,1,4,5,1; what would the median be? (Solution: 1,1,2,4,5 median = 2)
Applying: Students are able to given a small ordered data set of whole number data points (odd number of points), students will identify the median.	• Indicate the middle (median) from a set of given data. **Example:** 1,1,2,4,5 median = 2
Developing: Students are able to describe or draw conclusions about data using concrete objects and/or manipulatives.	• Uses comparison words to describe the elements of a collection/group within the natural environment. **Example:** larger, fewer, more, less. • Draws conclusions from various representations of data sets.
Introducing: Students are able to describe characteristics of an object, picture, or a manipulatives.	• Indicates an understanding of comparison words within the natural environment such as more, fewer, same, none, larger, smaller, least (minimum), most (maximum), middle (median.)

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard
4.S.2.1. Students are able to determine the probability of simple events limited to equally likely and not equally likely outcomes.

Extended Content
4.A.S.2.1. Students are able to classify events as likely or unlikely.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to predict the outcome of events as likely or unlikely.	**Example:** 1. Is it likely or unlikely that the spinner will always land in same position?
Applying: Students are able to classify events as likely or unlikely.	**Example:** 1. Associate daily scheduled events as likely.
Developing: Students are able to identify events that are impossible or possible by using concrete materials.	**Example:** 1. Can a blue block be chosen from a bag with only red or green blocks in it?
Introducing: Students are able to list possible outcomes of a simple event.	• Respond yes or no to questions about the possible outcomes of a simple event.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 5

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

General Education Standard
5.A.1.1. Students are able to use a variable to write an addition expression.

Extended Content
5.A.A.1.1. Students are able to use a variable to write an addition expression. (2 + n)

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to use a variable to write addition and subtraction expressions.	• Write the expression using a letter and mathematical symbols **Example**. 3 + n
Applying: Students are able to use a variable to write an addition expression.	• Write the expression using a letter for the unknown and the addition symbol • Recognize words like increase, in addition to, plus, sum, etc.
Developing: Students are able to write an addition expression	• Using numbers and mathematical symbols write an addition expression • Recognize words like increase, in addition

	to, plus, sum, etc.
Introducing: Students are able to identify an addition expression.	• Recognize the addition symbol

General Education Standard
5.A.1.2. Recognize and use the associative property of addition and multiplication.

Extended Content
5.A.A.1.2. Students will recognize the associative property of addition and multiplication.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize and use the associative property of addition and multiplication.	• Shows that the order of numbers in an addition problem does not matter. • Shows that the order of numbers in a multiplication problem does not matter • Recognize the use of the parenthesis • Find the missing digit in an example of associative property. **Example** 2 + (__ + 4) = (2 + 3) + 4
Applying: Students are able to recognize the associative property of addition and multiplication.	• Shows that the order of numbers in an addition problem does not matter. • Shows that the order of numbers in a multiplication problem does not matter • Recognize the use of the parenthesis **Example** 2 + (3 + 4) = (2 + 3) + 4 **Example** 3(2*4) = (3 * 2)4
Developing: Students are able to demonstrate the associative property of addition by grouping items.	• Shows that the order of numbers in an addition problem does not matter. **Example:** Given three groups of items students will change the position of the groups and realize the total of all three groups does not change.
Introducing: Students are able to identify groups that are equal.	• Demonstrate what equal means **Example:** Students make two equal groups of items.

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
5.A.2.1. Students are able to write one-step first degree equations using the set of whole numbers and find a solution.

Extended Content
5.A.A.2.1. Students are able to write addition equations using the set of whole numbers and find a solution.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to write addition and subtraction equations using the set of whole numbers and find a solution.	• Use the addition, subtraction, and equal symbols. • Understand the variable is the unknown. • Count up to the sum. • Count down to the difference.
Applying: Students are able to write addition equations using the set of whole numbers and find a solution.	• Use the addition and equal symbol. • Understand the variable is the unknown. **Example:** 1. n=6 • Count up to the sum **Example**. 1. 2 + n = 5 2. **3 + n = 9;** • Students use counters to find the unknown.
Developing: Students are able to identify the missing variable in an equation.	• Understand the variable is the unknown. • Recognize the addition and equal symbols.
Introducing: Students are able to use a set of pictures or objects students will identify an equation.	• Count objects. • Understand groups of objects combined equals a total. **Example**. Using pictures or manipulatives students will fill in the numbers to make an equation, ____ + ____ = ____

Indicator 3: Interpret and develop mathematical models.

General Education Standard
5.A.3.1. Students are able to write and solve number sentences that represent two-step word problems using whole numbers.

Extended Content
5.A.A.3.1. Students will identify information needed to solve two-step word problems

using whole numbers.	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to solve and identify information needed to solve two-step word problems using whole numbers.	• Recognize words like increase, in addition to, plus, sum, etc. • Recognize words like twice as many, three times, etc. • Recognize words like decrease, less than, take away, etc. • Distinguish necessary facts needed to solve. • Recognize word form and numerical form. • Determine the operations needed to solve. • Perform the identified steps to solve the problem.
Applying: Students are able to identify information needed to solve two-step word problems using whole numbers.	• Recognize words like increase, in addition to, plus, sum, etc. • Recognize words like twice as many, three times, etc. • Recognize words like decrease, less than, take away, etc. **Example:** **1.** Sam has two apples and three oranges. He gave two pieces of fruit to Sally. How many pieces does he have left? • Distinguish necessary facts needed to solve. • Recognize word form and numerical form. • Determine the operations needed to solve.
Developing: Students are able to identify information needed to solve one-step word problems using whole numbers.	• Recognize words like increase, in addition to, plus, sum, etc. • Recognize words like twice as many, three times, etc. • Recognize words like decrease, less than, take away, etc. • Distinguish necessary facts needed to solve. • Recognize word form and numerical form. • Determine the operation needed to solve.
Introducing: Students are able to identify the numbers used in the word problem.	• Recognize numbers.

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard
5.A.4.1. Students are able to solve problems using patterns involving more than one operation.

Extended Content
5.A.A.4.1. Students are able to solve problems using patterns with whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve problems using patterns involving more than one operation.	• Recognize if the pattern increases or decreases. • Determine the pattern and continue. • Recognize the pattern has two parts. **Example:** 1. 2, 5, 4, 7, 6, ___, ___, ___, 2. Rule: +3,-1
Applying: Students are able to solve problems using patterns with whole numbers.	• Recognize if the pattern increases or decreases. • Determine the pattern and continue. **Example**. 2, 5, 8, ___, ___, ___,
Developing: Students are able to identify and continue a pattern with pictorial representations	• Recognize the change or changes in the pattern. • Continue the pattern.
Introducing: Students are able to demonstrate a pattern.	• Recognize what is different. • Recognize what is the same.

GEOMETRY

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
5.G.1.1 Students are able to describe and identify isosceles and equilateral triangles, pyramids, rectangular prisms, and cones.

Extended Content
5.A.G.1.1 Students will identify the characteristics of triangles, pyramids, rectangular prisms, and cones.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe and identify triangles, pyramids, rectangular prisms, and cones.	• Recognize the difference between two and three dimensional shapes • Classify the figures by their characteristics • State the characteristics of the figures
Applying: Students are able to identify the characteristics of triangles, pyramids, rectangular prisms, and cones.	• Recognize the difference between two and three dimensional shapes • Classify the figures by their characteristics
Developing: Students are able to identify triangles, pyramids, rectangular prisms, and cones.	• Recognize the difference between two and three dimensional shapes • Sort the figures by their characteristics
Introducing: Students are able to identify triangles, rectangular prisms, and cones.	• Recognize the difference between two and three dimensional shapes • Sort the figures by their characteristics

General Education Standard
5.G.1.2. Students are able to identify acute, obtuse, and right angles.

Extended Content
5.A.G.1.2. Students will identify and describe acute, obtuse, and right angles.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to draw, identify and describe acute, obtuse, and right angles.	• Identify and describe right, acute, and obtuse angles. • Draw different types of angles.
Applying: Students are able to identify and describe acute, obtuse, and right angles.	• Identify and describe right, acute, and obtuse angles.
Developing: Students are able to identify acute, obtuse, and right angles.	• Match pairs of right, acute, and obtuse angles.
Introducing: Students are able to identify angles.	• Trace right, acute, and obtuse angles.

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
5.G.2.1. Students are able to determine lines of symmetry in rectangles, squares, and triangles.

Extended Content
5.A.G.2.1 Students will determine lines of symmetry in rectangles, squares, and triangles.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to determine and draw lines of symmetry in rectangles, squares, and triangles.	• Recognize that a line symmetry divides a shape in equal halves. • Draw lines of symmetry.
Applying: Students are able to determine lines of symmetry in rectangles, squares, and triangles.	• Recognize that a line symmetry divides a shape in equal halves.
Developing: Students are able to determine if the line is symmetric.	• Recognize that a line symmetry divides something in equal halves.
Introducing: Students are able to compare two parts of a whole.	• Recognize two equal parts combined makes a whole.

General Education Standard
5.G.2.2. Students are able to identify a turn or flip (rotation or reflection) of a given figure.

Extended Content
5.A.G.2.2. Students are able to identify a turn or flip (rotation or reflection) of a given figure.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify a turn, slide, or flip (rotation, translation, or reflection) of a given figure.	• Recognize a figure doesn't change in size or shape when it is moved, slid, or flipped. • Demonstrate a turn. • Demonstrate a slide. • Demonstrate flip.
Applying: Students are able to identify a turn or flip (rotation or reflection) of a given figure.	• Recognize a figure doesn't change in size or shape when it is moved or flipped. • Demonstrate a turn. • Demonstrate flip.
Developing: Students are able to demonstrate a turn or flip using a concrete shape.	• Recognize a shape doesn't change in size or shape when it is moved or flipped. • Demonstrate a turn. • Demonstrate flip.
Introducing: Students are able to slide an object from one position to another.	• Demonstrate a figure doesn't change in shape or size when moved. • Compare two identical shapes when one has been moved.

General Education Standard
5.G.2.3. Use two-dimensional coordinate grids to find locations and represent points and simple figures.

Extended Content
5.A.G.2.3. Students will use two-dimensional coordinate grids to find locations.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use two-dimensional coordinate grids to find locations and simple figures.	• Recognize an ordered pair is two numbers representing an x and y coordinate. • Recognize the x axis is across and comes first. • Recognize the y axis is up and comes second. • Determine where the two numbers or symbols (ordered pairs) form a point. • Plot the point of the ordered pair on the graph. • Connect the plotted points.
Applying: Students are able to use two-dimensional coordinate grids to find locations.	• Recognize an ordered pair is two numbers representing an x and y coordinate. • Recognize the x axis is across and comes first. • Recognize the y axis is up and comes second. • Determine where the two numbers or symbols (ordered pairs) form a point. • Plot the point of the ordered pair on the graph.
Developing: Students are able to identify a given location simple coordinate map.	• Determine what two numbers or symbols formed the point. • Demonstrate a knowledge of across. • Demonstrate a knowledge of up. • Show the ability to follow a path.
Introducing: Students are able to find a location when given direction words such as up, down, or over	• Demonstrate a knowledge of across. • Demonstrate a knowledge of up. • Show the ability to follow a path.

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
5.M.1.1. Students are able to determine elapsed time within an a.m. or p.m. period on the quarter-hour.

Extended Content
5.A.M.1.1. Students will determine elapsed time within an a.m. or p.m. period on the half-hour.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to determine elapsed time within an a.m. or p.m. period on the quarter-hour.	• Ability to count time forward and backward. • Recognize time increments of 15 minutes (quarter to, quarter after).
Applying: Students are able to determine elapsed time within an a.m. or p.m. period on the half-hour.	• Ability to count time forward and backward. • Recognize time increments of 30 minutes (half past). • Fred watched TV from 4:30 for 2 ½ hours. What time did Fred stop watching TV?
Developing: Students are able to determine elapsed time within an a.m. or p.m. period on the hour.	• Ability to count time forward and backward.
Introducing: Students are able to identify and give the date for today, tomorrow, and yesterday.	• Recognize terms like: after, before, next. • Identify the concepts of a calendar.

General Education Standard
5.M.1.2. Students are able to solve problems involving money including making change.

Extended Content
5.A.M.1.2 Students will solve problems involving money including making change.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve problems involving money including making change and counting it back.	• Count by 5's, 10's, and 25's. • Count up from a given number. • Addition and subtraction of number. • Recognize money values and symbols.
Applying: Students are able to solve problems involving money including making change.	• Count by 5's, 10's, and 25's. • Addition and subtraction of number. • Recognize money values and symbols. **Example:**

(continued on next page)	1. Jeff bought a baseball bat for $2.25 and paid for it with a $5.00 bill. How much money did he get back?
Developing: Students are able to count money.	• Count by 5's, 10's, and 25's • Recognize the coins. • Recognize money values and symbols.
Introducing: Students are able to sort and group collections of coins.	• Sort coins by characteristics.

General Education Standard
5.M.1.3. Students are able to use and convert U.S. Customary units of length (inches, feet, yard), and weight (ounces, pounds).

Extended Content
5.A.M.1.3. Students are able to use and/or convert U.S. Customary units of length (inches, feet, yard), and weight (ounces, pounds).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use and convert U.S. Customary units of length (inches, feet, yard), and weight (ounces, pounds).	• Recognize the relationship between inches, feet, and yard. • Recognize the relationship between ounces and pounds. • Measure the length of items using a ruler. • Measure the weight of items using a scale.
Applying: Students are able to use and/or convert U.S. Customary units of length (inches, feet, yard), and weight (ounces, pounds).	• Recognize the relationship between inches, feet, and yard. **Example**. How many inches are in a foot? • Recognize the relationship between ounces and pounds. • Measure the length of items using a ruler. • Measure the weight of items using a scale. **Example**. If I was to measure the classroom what unit of measurement would I use?
Developing: Students are able to use U.S. Customary units of length (inches, feet, yard), and weight (ounces, pounds).	• Recognize the differences between inches, feet, and yard. • Recognize the difference between an ounce and pound. • Measure the length of items using a ruler. • Measure the weight of items using a scale.
Introducing: Students are able to identify longer, shorter, heavier, or lighter.	• When given a variety of items, distinguish how they are different.

General Education Standard
5.M.1.4. Students are able to use appropriate tools to measure length, weight, temperature, and area in problem solving.

Extended Content
5.A.M.1.4 Students will use appropriate tools to measure length, weight, and temperature in problem solving.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use appropriate tools to measure length, weight, area, and temperature in problem solving.	• Recognize a ruler measures length. • Recognize a scale measures weight. • Recognize a thermometer measures temperature. • Recognize area is length times width. • Measure and read the correct unit for the problem.
Applying: Students are able to use appropriate tools to measure length, weight, and temperature in problem solving.	• Recognize a ruler measures length. • Recognize a scale measures weight. • Recognize a thermometer measures temperature. • Measure and read the correct unit for the problem. **Example:** 1. Using a scale what is the difference between the weight of your spelling workbook and your math textbook?
Developing: Students are able to appropriate tools to measure length, weight, and temperature.	• Recognize a ruler measures length. • Recognize a scale measures weight. • Recognize a thermometer measures temperature. • Measure and read the correct unit for the problem.
Introducing: Students are able to choose the appropriate tool needed for length, weight, or temperature.	• Recognize a ruler measures length. • Recognize a scale measures weight. • Recognize a thermometer measures temperature.

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
5.N.1.1. Students are able to read, write, order, and compare numbers from .001 to 1,000,000,000.

Extended Content
5.A.N.1.1. Students will read, write, order, and compare whole numbers up to 1000.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to read, write, order, and compare whole numbers from .01 to 1000.	• Use greater than and less than symbols. • Recognize that decimal numbers are less than 1. • Sequence numbers.
Applying: Students are able to read, write, order, and compare whole numbers up to 1000	• Use greater than and less than symbols. • Sequence numbers. **Example:** 1. Order these numbers from least to greatest: 24, 5, 866, 99
Developing: Students are able to order and compare numbers up to 1000.	• Use greater than and less than symbols. • Sequence numbers. **Example:** 1. Order these numbers from least to greatest: 24, 5, 866, 99
Introducing: Students are able to order whole numbers.	• Use greater than and less than symbols. • Sequence numbers.

General Education Standard
5.N.1.2. Students are able to find prime, composite, and factors of whole numbers from 1 to 50.

Extended Content
5.A.N.1.2. Students will distinguish if numbers are prime and identify factors for numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify factors of whole numbers up to 20.	• Demonstrate the use of multiplication chart or facts. • Recognize two numbers multiplied by each other are factors.
Applying: Students are able to distinguish if numbers are prime and identify factors for numbers.	• Recognize numbers that are not divisible by any other numbers but 1 and itself as being prime. • Demonstrate the use of multiplication chart or facts. • Recognize two numbers multiplied by each other are factors.
Developing: Students are able to identify factors of whole numbers up to 9.	• Demonstrate the use of multiplication chart or facts • Recognize two numbers multiplied by each other are factors
Introducing: Students are able to group items by a given number.	• Recognize groups that are the same • Recognize different numbers combined can make the same sum

General Education Standard
5.N.1.4. Students are able to locate negative integers on a number line.

Extended Content
5.A.N.1.4. Students are able to locate negative integers on a number line.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to label negative integers on a number line.	• Recognize the correct placement of integers on a number line.
Applying: Students are able to locate negative integers on a number line.	• Recognize the correct placement of integers on a number line.
Developing: Students are able to recognize negative numbers on a thermometer.	• Recognize numbers below 0 on a thermometer are negative.
Introducing: Students are able to identify numbers on a number line.	• Recognize the correct placement of positive integers on a number line.

Indicator 2: Apply operations within the set of real numbers.

General Education Standard
5.N.2.1. Students are able to find the quotient of whole numbers using two-digit divisors.

Extended Content
5.A.N.2.1. When given a divisor, students are able to divide a given set of objects into groups.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to find the quotient of whole numbers using single-digit divisors.	• Demonstrate the use of a multiplication chart or facts. • Recognize that multiplication and division are opposite operations.
Applying: When given a divisor, students are able to divide a set of given objects into groups.	• Demonstrate the use of a multiplication chart or facts. • Recognize that multiplication and division are opposite operations.
Developing: Students are able to divide a set of given objects into groups.	• Recognize equal groups of objects and acknowledge items left over.
Introducing: Students are able to divide a set of given objects into equal groups.	• Recognize equal groups of objects and acknowledge items left over.

General Education Standard
5.N.2.2. Students are able to determine equivalent fractions including simplification (lowest terms of fractions).

Extended Content
5.A.N.2.2. Students will identify equivalent fractions including simplification.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify equivalent fractions including simplification	• Lowest terms of fractions1/2, 1/3, and ¼. **Example:** Use a number line or manipulatives to show how the fractions are equal.
Applying: Students are able to identify equivalent fractions including simplification	• Lowest terms of fractions1/2 and ¼. **Example:** Use a number line or manipulatives to show how the fractions are equal.

Developing: Students are able to use a number line to identify equivalent fractions.	• Recognize that fractions are parts of a whole. • Recognize different fractions represent the same value.
Introducing: Students are able to identify a fraction of a whole.	**Example:** Using manipulatives show how fractions make-up a whole.

Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.

General Education Standard
5.N.3.1. Students are able to use different estimation strategies to solve problems involving whole numbers, decimals, and fractions to the nearest whole number.

Extended Content
5.A.N.3.1. Students will use different estimation strategies to solve problems using whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use different estimation strategies to solve problems using whole numbers and fractions.	• Recognize if a fraction is closer to one whole or less than one half. • Recognize rounding as a tool to estimate. • Locate the necessary information to solve the problem.
Applying: Students are able to use different estimation strategies to solve problems using whole numbers.	• Recognize rounding as a tool to estimate • Locate the necessary information to solve the problem.
Developing: Students are able to estimate whole numbers by rounding to the nearest tens.	• Recognize rounding as a tool to estimate • Recognize numbers 5-9 round up and below 5 round down.
Introducing: Students are able to identify the concept of few or many.	

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
5.S.1.1. Students are able to gather, graph, and interpret data.

Extended Content
5.A.S.1.1. Students will gather, graph, and/or interpret data.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to gather, graph, and draw conclusions from data.	• Collect data. • Tally information. • Interpret information. • Supply the information on the graph.
Applying: Students are able to gather, graph, and/or interpret data.	• Collect data. • Tally information. • Interpret information. • Supply the information on the graph.
Developing: Students are able to answer simple questions about the data.	• Interpret information.
Introducing: Students are able to indicate greater than or less when referring to items on a graph.	• Recognize more and less.

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard
5.S.2.1. Students are able to classify probability of simple events as certain, likely, unlikely, or impossible.

Extended Content
5.A.S.2.1. Students are able to classify probability of simple events as certain, likely, unlikely, or impossible.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to find the probability of a simple event doing an activity.	• Recognize that probability is the likelihood that a given event will take place. **Example**: 1. The probability of throwing a six with a single throw of one die is 1/6.
Applying: Students are able to classify probability of simple events as certain, likely,	• Recognize that probability is the likelihood that a given event will take place.

unlikely, or impossible.	**Examples**: 1. The probability of pulling a yellow marble out of a bag of yellow marbles is certain/likely. 2. Snowfall in August is unlikely.
Developing: Students are able to indicate if an event is possible or impossible.	• Recognize that probability is the likelihood that a given event will take place. **Example**: 1. The probability of pulling a yellow marble out of a bag of yellow and red marbles is possible. 2. The probability of pulling a blue marble out of a bag of yellow marbles is impossible.
Introducing: Students are able to indicate if an event is possible or impossible.	**Example**: 1. Will it rain tomorrow?

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 6

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

General Education Standard
6.A.1.1 Students are able to use order of operations, excluding nested parentheses and exponents, to simplify whole number expressions.

For the general education standard 6.A.1.1 it is felt a lower level of complexity is not attainable.

General Education Standard
6.A.1.2 Students are able to write algebraic concepts involving addition or multiplication using whole numbers.

Extended Content
6.A.A.1.2. Students are able to write simple algebraic expressions involving addition or multiplication using whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to write simple algebraic expressions involving addition, subtraction, or multiplication using whole numbers.	• Write the expression using a letter for the unknown and the addition symbol. • Write a multiplication expression by putting the number directly before the letter without any symbols. • Write a subtraction expression using a letter for the unknown and the subtraction symbol. • Recognize words like increase, in addition to, plus, sum, etc. • Recognize words like twice as many, three times, etc. • Recognize words like decrease, less than, take away, etc.
Applying: Students are able write simple algebraic expressions involving addition or multiplication using whole numbers.	• Write the expression using a letter for the unknown and the addition symbol. **Example**: 1. n + 2 2. 4a • Write a multiplication expression by putting the number directly before the letter without any symbols. • Recognize words like increase, in addition to, plus, sum, etc. • Recognize words like twice as many, three times, etc.
Developing: Students are able to illustrate simple algebraic expressions involving addition using whole numbers.	• The ability to count and recognize numbers. • Recognize words like increase, in addition to, plus, sum, and etc. are associated with addition. **Example**: Students are given the expression 3 + 2 and would use counters to show the two groups.
Introducing: Students are able to copy an algebraic expressions involving addition using whole numbers.	• Recognize of numbers. • Demonstrate equal groups. **Example**: The teacher will demonstrate

	two groups and the student copies the process (teacher may have to guide).

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
6.A.2.1 Students are able to write and solve one-step 1st degree equations, with one variable, involving inverse operations using the set of whole numbers.

Extended Content
6.A.A.2.1. Students will write and solve addition equations using the set of whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will write and solve equations involving the inverse operations of addition and subtraction using the set of whole numbers.	• Use the addition, subtraction, and equal symbols. • Understand the variable is the unknown. • Show that addition and subtraction are opposites. • Recognize that they must do the opposite operation to both sides of the equation in order to solve for the variable.
Applying: Students will write and solve addition equations using the set of whole numbers.	• Use the addition and equal symbol. • Understand the variable is the unknown. • Count up to the sum. **Example**: 1. 2 + n = 5 2. Students use counters to find the unknown.
Developing: Students will identify the missing variable in an equation.	• Understand the variable is the unknown. • Recognize the addition and equal symbols.
Introducing: Using a set of pictures or objects, students will identify an equation.	• Count objects. • Understand groups of objects combined equals a total. **Example:** 1. Using pictures or manipulatives students will fill in the numbers to make an equation, ____ + ____ = ____

Indicator 3: Interpret and develop mathematical models.

General Education Standard **6.A.3.1. Students are able to identify and graph ordered pairs in Quadrant I on a coordinate plane.** **Extended Content** **6.A.A.3.1. Students will graph ordered pairs in Quadrant 1 on a coordinate plane.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to identify and graph ordered pairs in Quadrant 1 on a coordinate plane.	• Recognize an ordered pair is two numbers representing an x and y coordinate. • Recognize the x axis is across and comes first. • Recognize the y axis is up and comes second. • Determine where the two numbers or symbols (ordered pairs) form a point. • Plot the point of the ordered pair on the graph.
Applying: Students are able to graph ordered pairs in Quadrant 1 on a coordinate plane.	• Recognize an ordered pair is two numbers representing an x and y coordinate. • Recognize the x axis is across and comes first. • Recognize the y axis is up and comes second. • Determine where the two numbers or symbols (ordered pairs) form a point.
Developing: Students are able to identify ordered pairs in Quadrant 1 on coordinate plane.	• Recognize an ordered pair is two numbers representing an x and y coordinate. • Recognize the x axis is across and comes first. • Recognize the y axis is up and comes second.

	• Determine what two numbers or symbols formed the point.
Introducing: Students are able to trace the path of ordered pairs with guidance.	• Demonstrate a knowledge of across. • Demonstrate a knowledge of up. • Show the ability to follow a path.

General Education Standard
6.A.3.2. Students are able to solve one-step problems involving ratios and rates.

Extended Content
6.A.A.3.2 Students will identify and write simple ratios & rates.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve one-step problems involving ratios and rates.	• Determine a numerical relationship between two sets of items. • Recognize how ratios are written. • Recognize a rate uses two different measurement units. • Use division to solve rates. **Example**. At the store Jane purchased 4 pencils and spent $1.00. What is the cost per pencil? $.25
Applying: Students are able to identify and write simple ratios & rates.	• Determine a numerical relationship between two sets of items. • Recognize how ratios are written. • Recognize a rate uses two different measurement units.
Developing: Students are able to identify simple ratios.	• Determine a numerical relationship between two sets of items. • Recognize how ratios are written. **Example**. 5:12 or 5/12
Introducing: Students are able to count the items used to make a ratio.	• Recognize and count numbers.

Indicator 4: Describe and use properties and behaviors of relations, functions, and inverses.

General Education Standard
6.A.4.1. Students are able to use concrete materials, graphs, and algebraic statements to represent problem situations.

Extended Content
6.A.A.4.1. Students will use concrete materials and graphs to represent problem situations.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use concrete materials, graphs, and algebraic statements to represent problem situations.	• Recognize patterns. • Recognize sequence. • Extend the pattern. • Use variables to represent given quantities in problem situations.
Applying: Students are able to use variables to represent given quantities in problem situations	• Recognize patterns. • Recognize sequence. • Extend the pattern.
Developing: Students are able to use concrete materials or select a graph that represents the problem situation.	• Recognize patterns. • Recognize sequence. • Extend the pattern.
Introducing: Students are able to select the correct illustration or set of concrete materials that represent.	• Recognize patterns. • Recognize sequence. • Extend the pattern.

GEOMETRY

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
6.G.1.1. Students are able to identify and describe the characteristics of triangles and quadrilaterals.

Extended Content
6.A.G.1.1. Students are able to identify and describe the characteristics of triangles and quadrilaterals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to able to draw, identify and describe the characteristics of triangles and quadrilaterals.	• Identify and describe equilateral, right, acute, and obtuse triangles. • Identify and describe triangles with 2 equal

	sides and no equal sides. • Identify and describe a parallelogram, rhombus, rectangle, and square.
Applying: Students are able to identify and describe the characteristics of triangles and quadrilaterals. *(continued on next page)*	• Identify right, acute, and obtuse triangles. • Identify triangles with equal, 2 equal sides, and no equal sides. • Identify rectangle, rhombus, and square.
Developing: Students are able to differentiate between different types of triangles and quadrilaterals.	• Classify and/or sort triangles by their side length. • Match pairs of acute, right, & obtuse triangles. • Classify and/or sort rectangle, squares, and rhombuses. • Match pairs of rectangles, squares, and rhombuses.
Introducing: Students are able to match similar triangles and quadrilaterals.	• Trace triangles • Given a model and indicate a triangle out of a given set of geometric shapes. • Trace rectangles, squares, and rhombuses. • Given a model of a rectangle, square, or rhombus and will indicate the same shape.

General Education Standard
6.G.1.2. Students are able to identify and describe angles.

Extended Content
6.A.G.1.2. Students are able to identify and describe angles.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to draw, identify and describe angles.	• Identify and describe right, acute, and obtuse angles. • Draw different types of angles.
Applying: Students are able to identify and describe angles.	• Identify right, acute, and obtuse angles.
Developing: Students are able to differentiate between different types of angles.	• Match pairs of right, acute, and obtuse angles.
Introducing: Students are able to match similar angles.	• Trace right, acute, and obtuse angles.

Indicator 2: Use properties of geometric figures to solve problems from a variety

of perspectives.

General Education Standard **6.G.2.1. Students are able to use basic shapes to demonstrate geometric concepts.** **6.A.G.2.1 Students are able to use basic figures to demonstrate lines of symmetry, reflection, perpendicular lines, and parallel lines.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to use basic figures to demonstrate congruency, lines of symmetry, reflection, perpendicular lines, and parallel lines.	• Show lines of symmetry. • Demonstrate congruency (triangle, square, parallelogram, & rectangle). • Use basic shapes to demonstrate perpendicular lines. • Use basic shapes to demonstrate parallel lines. • Use basic shapes to demonstrate similarity. • Identify reflection.
Applying: Students are able to use basic figures to demonstrate lines of symmetry, reflection, perpendicular lines, and parallel lines.	• Show lines of symmetry. • Use basic shapes to demonstrate perpendicular lines. • Use basic shapes to demonstrate parallel lines. • Use basic shapes to demonstrate similarity • Identify reflection.
Developing: Students are able to identify lines of symmetry, reflection, perpendicular lines, and parallel lines in figure.	• Show lines of symmetry. • Use basic shapes to demonstrate perpendicular lines. • Use basic shapes to demonstrate parallel lines. • Identify reflection.
Introducing: Students are able to trace lines of symmetry, perpendicular lines, and parallel lines in figure.	• Show lines of symmetry. • Use basic shapes to demonstrate perpendicular lines. • Use basic shapes to demonstrate parallel lines. • Identify reflection.

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
6.M.1.1. Students are able to select, use, and convert appropriate unit of measurement for a situation.

Extended Content
6.A.M.1.1. Students will select, use, and/or convert appropriate unit of measurement within a measurement system.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use, and convert appropriate unit of measurement within a measurement system.	• Recognize a ruler measures length. • Recognize a scale measures weight. • Recognize a thermometer measures temperature. • Recognize the relationship between inches, feet, and yard. • Recognize the relationship between ounces and pounds. • Measure the length of items using a ruler. • Measure the weight of items using a scale.
Applying: Students are able to select, use, and/or convert appropriate unit of measurement within a measurement system.	• Recognize a ruler measures length. • Recognize a scale measures weight. • Recognize a thermometer measures temperature. • Recognize the relationship between inches, feet, and yard. • Recognize the relationship between ounces and pounds. • Measure the length of items using a ruler. • Measure the weight of items using a scale.
Developing: Students are able to select and use the appropriate unit of measurement within a measurement system.	• Recognize a ruler measures length. • Recognize a scale measures weight. • Recognize a thermometer measures temperature. • Measure the length of items using a ruler. • Measure the weight of items using a scale.
Introducing: Students are able to select the appropriate unit of measurement within a measurement system.	• Recognize an inch, foot, and yard measures length. • Recognize an ounce and pound measures weight. • Recognize a degree measures temperature.

General Education Standard
6.M.1.2. Students are able to find the perimeter and area of squares and rectangles (whole number measurements).

Extended Content
6.A.M.1.2 Students will find the perimeter and/or the area of squares and rectangles.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify the perimeter and the area of squares and rectangles.	• Recognize the perimeter is the distance around a quadrilateral. • Recognize that perimeter is twice the length and twice the width. • Recognize that area is the space inside the quadrilateral.
Applying: Students are able to find the perimeter and/or the area of squares and rectangles	• Recognize the perimeter is the distance around a quadrilateral. • Recognize that area is the space inside the quadrilateral.
Developing: Students are able to identify the perimeter	• Recognize the perimeter is the distance around a quadrilateral. • Demonstrate the concept around.
Introducing: Students are able to trace the perimeter.	• Recognize the perimeter is the distance around a quadrilateral. • Demonstrate the concept around.

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
6.N.1.1. Students are able to represent fractions in equivalent forms and convert between fractions, decimals, and percents using halves, fourths, tenths, and hundredths.

Extended Content
6.A.N.1.1. Students will order and compare decimals and whole numbers.

Grade Level Alternate Academic	Target Skills

Achievement Descriptors	
Advancing: Students are able to order and compare fractions, decimals and whole numbers.	• Use greater than and less than symbols. • Recognize that decimal numbers and fractions are less than 1. • Sequence numbers.
Applying: Students are able to order and compare decimals and whole numbers.	• Use greater than and less than symbols. • Recognize that decimal numbers are less than 1. • Sequence numbers.
Developing: Students are able to order and compare decimals and whole numbers using a number line.	• Use greater than and less than symbols. • Recognize that decimal numbers are less than 1. • Sequence numbers.
Introducing: Students are able to identify greater than or less than when comparing whole numbers.	• Use greater than and less than symbols. • Sequence numbers.

General Education Standard
6.N.1.2. Students are able to find factors and multiples of whole numbers.

Extended Content
6.A.N.1.2. Students will find factors and multiples of whole numbers, and identify prime numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to find factors up to 20 and multiples of whole numbers.	• Demonstrate the use of multiplication chart or facts. • Recognize two numbers multiplied by each other are factors. • Recognize a multiple is a continuing adding of that number (repeated addition).
Applying: Students are able to find factors and multiples of whole numbers, and identify prime numbers.	• Demonstrate the use of multiplication chart or facts. • Recognize two numbers multiplied by each other are factors. • Recognize a multiple is a continuing adding of that number (repeated addition). • Recognize numbers that are not divisible by any other numbers but 1 and itself as being prime.
Developing: Students are able to identify the missing factor using a multiplication chart and count by 2's, 3's, 5's, and/or 10's	• Demonstrate the use of multiplication chart or facts. • Recognize two numbers multiplied by each

to find multiples.	other are factors. • Recognize a multiple is a continuing adding of that number (repeated addition).
Introducing: Students are able to group items by a given number.	• Recognize groups that are the same. • Recognize different numbers combined can make the same sum.

Indicator 2: Apply operations within the set of real numbers.

General Education Standard
6.N.2.1. Students are able to add, subtract, multiply, and divide decimals.

Extended Content
6.A.N.2.1. Students will add and subtract decimals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to add, multiply, and subtract decimals.	• Recognize with addition and subtraction the decimal is aligned. • Recognize in multiplication the decimal is placed by counting the decimal places in the factors.
Applying: Students are able to add and subtract decimals.	• Recognize with addition and subtraction the decimal is aligned.
Developing: Students are able to add and subtract whole numbers.	• Recognize with addition and subtraction.
Introducing: Students are able to indicate the concept of adding to or taking away.	• Demonstrate the use of greater than or less than.

Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.

General Education Standard
6.N.3.1 Students are able to use various strategies to solve one- and two-step problems involving positive decimals.

Extended Content
6.A.N.3.1 Students will use various strategies to solve one- and two-step problems using addition or subtraction of whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use various	• Recognize with addition and subtraction

strategies to solve one-step decimal problems.	the decimal is aligned. • Recognize in multiplication the decimal is placed by counting the decimal places in the factors. • Locate the information needed to solve the problem.
Applying: Students are able to use various strategies to solve one- and two-step problems using addition or subtraction of whole numbers.	• Recognize with addition and subtraction the decimal is aligned. • Recognize in multiplication the decimal is placed by counting the decimal places in the factors. • Locate the information needed to solve the problem. • Recognize the operation or operations needed to solve problems.
Developing: Students are able to identify what operation or operations will be used to solve the problem.	• Locate the information needed to solve the problem. • Recognize words such as more, total less than, in all, etc.
Introducing: Students are able to identify the numbers used to solve the problem.	• Locate the numbers needed to solve the problem.

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
6.S.1.1. Students are able to display data using bar and line graphs and draw conclusions from data displayed in a graph.

For the general education standard 6.S.1.1 it is felt a lower level of complexity is not attainable.

General Education Standard
6.S.1.2. Students are able to display data using bar and line graphs and draw conclusions from data displayed in a graph.

Extended Content
6.A.S.1.2. Students will interpret the data using bar and line graphs and answer questions

from data displayed in a graph.	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to display the data using bar and line graphs and draw conclusions from data displayed in a graph.	• Interpret information. • Construct a bar or line graph. • Graph data. • Determine best type of graph to display data.
Applying: Students are able to interpret the data using bar and line graphs and answer questions from data displayed in a graph.	• Interpret information to answer questions.
Developing: Students are able to use graphs to answer simple questions from the data displayed in a graph.	• Interpret information to answer questions. • Compare more or less.
Introducing: Students are able to indicate greater than or less when referring to items on a graph.	• Interpret information to answer questions. • Compare more or less. • Apply concept more or less.

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard **6.S.2.1. Students are able to find the probability of a simple event.** **Extended Content** **6.A.S.2.1. Students will explain the probability of a simple event using pictorial representations.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to find the probability of a simple event through an activity	• Recognize that probability is the likelihood that a given event will take place. **Example:** 1. Probability of throwing a six with a single throw of one die is 1/6.
Applying: Students are able to explain the probability of a simple event using manipulatives.	• Recognize that probability is the likelihood that a given event will take place. **Example**: 1. The probability of pulling a yellow marble out of a bag of yellow marbles is certain/likely. • Use of a spinner with three colors, numbers, etc.
Developing: Students are able to identify if	• Recognize that probability is the likelihood

an event is likely, certain, unlikely, or impossible.	that a given event will take place. **Example**: 1. The probability of pulling a yellow marble out of a bag of yellow marbles is certain/likely. 2. Snowfall in August is unlikely.
Introducing: Students are able to indicate if an event is possible or impossible.	• Recognize that probability is the likelihood that a given event will take place. **Example**: 1. The probability of pulling a yellow marble out of a bag of yellow and red marbles is possible. • The probability of pulling a blue marble out of a bag of yellow marbles is impossible.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 7

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

General Education Standard
7.A.1.1. Students are able to write and evaluate algebraic expressions using the set of whole numbers.

Extended Content
7.A.A.1.1. Students will write and simplify addition and subtraction algebraic expressions.

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to create and evaluate algebraic expressions involving addition, subtraction, and multiplication of whole numbers.	• Copy and write numerals and algebraic symbols. • Recognize and use basic algebraic terms. • Simplify and solve algebraic expressions using replacement values.
Applying: Students are able to write and simplify addition and subtraction algebraic expressions.	• Begin to use number sentences using symbolic representation. **Example:**

(continued on next page)	1. x + x = 2x 2. 2x – x = x • Recognize and use basic algebraic terms. • Use a variable to write an addition or subtraction expression.
Developing: When given the values for variables the student will simplify addition and subtraction algebraic expressions	• Define a variable in an algebraic expression. • Show a relationship between addition and subtraction. • Demonstrate techniques in adding and subtracting.
Introducing: Students are able to will use symbolic representation of unknown or variable quantities.	• Use symbolic representation of unknown or variable quantities.

General Education Standard
7.A.1.2 Students are able to identify associative, commutative, distributive, and identity properties involving algebraic expressions.

Extended Content
7.A.A.1.2 Students are able to identify and use associative, commutative, and identity properties involving whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify and use associative, commutative, distributive, and identity properties involving whole numbers.	• Use and identify associative and identity properties. **Examples:** 1. (1+2)+4=1+(2+4) (associative) 2. 5+0=5 or 8*1 = 8 (identity) • Use commutative and distributive properties to evaluate expressions. **Examples:** 1. 1+2=2+1 (commutative) 2. 2(1+3)=2+6 (distributive) • Determine which property to use to simplify an expression. • Write problems dealing with the commutative, associative, and identity properties.
Applying: Students are able to identify and use associative, commutative, and identity properties involving whole numbers.	• Use and identify associative and identity properties. **Examples:** 1. (1+2)+4=1+(2+4) (associative)

(continued on next page)	2. 5+0=5 or 8*1=8 (identity) • Use commutative property. **Examples:** 1. 1+2=2+1 (commutative) • Determine which property to use to simplify an expression.
Developing: Students are able to use objects and manipulatives to demonstrate the associative and commutative and identity properties.	• Use objects and manipulatives to demonstrate the associative and commutative and identity properties.
Introducing: Students are able to identify situations in which the order of events makes a difference and situations in which the order does not make a difference (commutative and non-commutative tasks)	• Use manipulatives and hand over hand method students will create equal sets. (associative and commutative) • Match identical sets of numbers. (associative and commutative) • Given a two-step task students will identify which step to complete first. (associative)

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard
7.A.2.1. Students are able to write and solve one-step 1st degree equations, with one variable, using the set of integers and inequalities, with one variable, using the set of whole numbers.

Extended Content
7.A.A.2.1. Students are able to write and solve one-step 1st degree equations with one variable, using whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to write and solve one-step 1st degree inequalities with one variable, using whole numbers.	• Read write and speak the language of algebra. • Recognize the difference between the inequalities symbols < (less than) > (greater than) = (equal to) • Determine inverse operations.
Applying: Students are able to write and solve one-step 1st degree equations with one variable, using whole numbers. *(continued on next page)*	• When given an oral prompt student will write numbers to show one-step 1st degree equations. **Example:** 1. X+ 3 = 4 solve for x

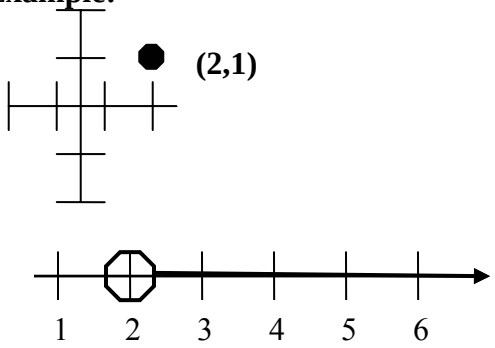
	• Uses +, -, and = symbols to write number sentences and solve problems (Create =, -, + with manipulatives when working with number sentences) • Determine inverse operations. • Identify key terms and word problems to determine the correct operation and solve the problem.
Developing: Students are able to use symbols and manipulatives to solve equation	• Use concrete materials to model and solve equations (classifying, sorting, patterning) • Join two sets together and identifies the total number. • Manipulate objects to create sets and make comparisons. • Identify problem situations that require addition and subtraction.
Introducing: Students are able to use manipulatives to complete a task or solve a problem.	• Removes objects from a set of objects. • Repeats imitation activities. **Example:** 1. Make equal number of sounds, blocks • Copy, trace and write numerals and mathematic symbols.

Indicator 3: Interpret and develop mathematical models.

General Education Standard
7.A.3.1. Students are able to identify and graph ordered pairs on a coordinate plane and inequalities on a number line.

Extended Content
7.A.A.3.1. Students are able to identify and graph ordered pairs on a coordinate plane and inequalities on a number line.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to construct a graph from a table.	• Label the x and y axis of a graph • Determine the appropriate interval for a scale on a graph • Interpret information from a table to determine the ordered pairs

Applying: Students are able to identify and graph ordered pairs on a coordinate plane and inequalities on a number line**.**	• Plot two ordered pairs on a coordinate plane. (quadrant 1, (1,1) , (2,2)) • Graph an inequality on a number line **Example:**  **X > 2**
Developing: Students are able to graph a number line.	• Identify which direction the line should move to differentiate between greater than and less than. • Graph a point on a number line for an inequality. • Differentiate between the meanings of an open and closed circle on a number line
Introducing: When given a direction and a demonstration using a simple positional concept, student will understand that direction by giving the appropriate response.	• Locate a point on the number line. • Locate a point on the number 1 quadrant plane. • Demonstrate above, under, over, and beside.

General Education Standard
7.A.3.2. Students are able to model and solve multi-step problems involving rates.

Extended Content
7.A.A.3.2. Students are able to model and solve multi-step problems involving rates.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create and solve multi-step problems involving rates.	• Identify the changes in values according to rates. • Identify linear and non linear growth patterns. • Identify the necessary information to make a rate.

Applying: Students are able to create and solve multi-step problems involving rates.	• Add, subtract, multiply and divide whole numbers. • Choose the better bargain using a given rate. **Example:** 1. Which represents the least expensive candy bar? A. 3 candy bars for $1.00 B. 4 candy bars for $1.50 C. 5 candy bars for $2.00 D. 6 candy bars for $2.50 • Given a model of a rate, students will solve problem.
Developing: Students are able to model and solve rates with a one to one correlation.	• Write unit rates. • Recognize symbols involve in unit rates. • Use models and pictures to show a change in one number to another number.
Introducing: Students are able to follow order of operations.	• Write and identify numbers. • Identify necessary information pertaining to a rate. • Identify a rate.

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard
7.A.4.1. Students are able to recognize one-step patterns using tables, graphs, and models and create one-step algebraic expressions representing the pattern.

Extended Content
7.A.A.4.1. Students will use patterns to solve problems (graphs, table, and equations)

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create one-step algebraic expressions representing a pattern.	• Determine a pattern in order to write an algebraic expression. • Uses pictures, models tables, charts graph words, number sentences and mathematical notations to interpret mathematical relationships. **Example:** Grow plants, follows a calendar to pay bills • Solve algebraic equations using replacement values.

Applying: Students are able to use patterns to solve problems (graphs, table, and equations).	• Charts data to solve problems. **Example:** X | Y 1 | 3 2 | 4 3 | ? • Identifies symbols to understand charts/graphs. • Simplify algebraic equations using replacement values.
Developing: Students are able to use manipulatives to create patterns.	• Graph plots or marks on a number line. • Recreate manipulatives patterns. • Unifix cubes, tangrams, puzzles, and model cars. • Locate a specific item within a given pattern. (where's Waldo)
Introducing: Students are able to repeat a pattern when given a pattern	• Follow oral directions with prompts. • Imitates to solve a problem. • Enters a given number sequence into a key pad.

GEOMETRY

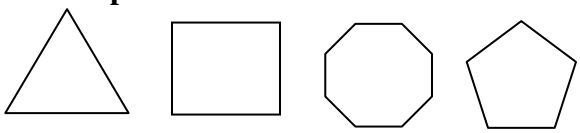
Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
7.G.1.1. Students are able to identify, describe, and classify polygons having up to 10 sides.

Extended Content
7.A.G.1.1. Students will identify and describe polygons having up to 10 sides.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to construct polygons with up to 10 sides.	• Given the name of a shape, draw an example. • Given part of a drawing, draw in missing sides to complete shape of given name. • Draw two lines to form an angle.

Applying: Students are able to identify and describe polygons having up to 10 sides.	• Name shapes having up to ten sides. **Example:**  *Name the polygons* • Recognize and use geometric shapes. • Given a name of a shape, students will identify number of sides.
Developing: Students are able to classify polygons having up to 10 sides.	• Name more complex shapes. • Match pictures of more complex shapes. • Classify shapes according to number of sides.
Introducing: Students are able to classify three basic shapes (circle, triangle, square).	• Point to three basic shapes. • When given an object, students will identify which shape the object is. • Identify plain figures.

General Education Standard
7.G.1.2. Students are able to identify and describe elements of geometric figures.

Extended Content
7.A.G.1.2. Students will identify and describe geometric figures.

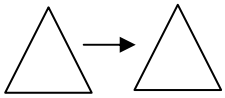
Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to differentiate between geometric figures.	• Identify the number of edges in a geometric figure. • Identify the size of a geometric figure. • Identify the size of the angles in a geometric figure.
Applying: Students are able to identify and describe geometric figures.	**Example:** 1. Elements of geometric figures are point, line, line segment, angles • Identify the midpoint of a line or line segment. • Identify a vertex. • Identify an edge. • Identify an angle.
Developing: Students are able to draw points, lines, and lines segments.	• Connect dots with line segments. • Draw a line. • Draw a given geometric element.

Introducing: Students are able to identify points, lines, and lines segments.	• Point to geometric elements. • Trace geometric elements. • Identify an arrow. • Identify a point on a line.

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
7.G.2.1. Students are able to demonstrate ways that shapes can be transformed.

Extended Content
7.A.G.2.1 Students will demonstrate ways that shapes can be transformed.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare ways shapes can be transformed.	• Transform a given shape left or right. • Transform a given shape up or down.
Applying: Students will demonstrate ways that shapes can be transformed.	 Slide • Trace the new transformed shape. • Name the transformation left or right. • Name the transformation up or down.
Developing: Students are able to use a variety of materials to move objects left, right, up, and down.	• Identify left and right. • Identify up and down • Initiate a transformation left, right, up, and down.
Introducing: Students are able to select identical shapes.	• Identify single shapes. • Match identical pictures. • Compare same and different objects.

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
7.M.1.1. Students are able to select, use, and convert appropriate unit of measurement for a situation including capacity and angle measurement with rational numbers.

Extended Content
7.A.M.1.1. Students will select, use and convert appropriate units of standard and metric measurement.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare units of standard and metric measurement.	• Compare a group of objects by measurable attributes. • Compare angles by measurements (acute, right, obtuse). • Use <, >, and = to compare measurement amounts within the same measurement system.
Applying: Students are able to use and convert appropriate units of standard and metric measurement.	• Use the appropriate unit of measurement to determine the measure (length, capacity, mass). • Covert measurements. • Measure angles. **Example**: 1. Measure length, capacity, and mass 2. How many inches are there in a foot? 3. How many mm are in 10cm?
Developing: Students are able to measure, and determine which measurement unit is appropriate.	• Choose the appropriate measuring tool to measure an object (scale, ruler, and clock). • Choose the appropriate measurement unit (inches, feet, yards, and miles).
Introducing: When given two pictures, objects, and/or manipulatives, students are able, to indicate which is less/more, longer/shorter.	• Determines if an object will fit into a given space. • Points to the shorter/longer of two objects. • Points to the group that is more/less.

General Education Standard
7.M.1.2. Given the formulas, students are able to find the circumference, perimeter, and area of circles, parallelograms, triangles, and trapezoids (whole number measurement).

Extended Content
7.A.M.1.2. Given the formula, students will find the perimeter and area of four-sided figures (quadrilaterals).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Given the formulas, students are able to find the perimeter and area of three and four sided figures.	• Differentiate between the formula for finding the area of a square and the area of a triangle. • Identify which side of a triangle is the base/height. • Differentiate between the formulas for finding the perimeter of a square and the perimeter of a triangle.
Applying: Given the formula students are able to find the perimeter and area of four sided figures (quadrilaterals).	• Use appropriate measurement units to solve problems. • Recognize and use measurement terms. • Use formulas in measurement situations. **Example:** W+W+L+L=P W=1, L=2 1+1+2+2=P 6 = P
Developing: Given the lengths and widths of a four-sided figure (quadrilateral), students are able to add the four sides to determine the perimeter.	• Add four given numbers together. • Add lengths. • Add widths.
Introducing: Students are able to trace a four-sided shape (quadrilateral.)	• Trace a line.

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard **7.N.1.1. Students are able to represent numbers in a variety of forms by describing, ordering, and comparing integers, decimals, percents, and fractions.** **Extended Content** **7.A.N.1.1. Students will order integers, decimals, and percents.**

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to read, write, order, and compare integers, decimals, and percents.	• Use > (greater than), < (less than), = to compare fractions • Use the correct mathematical symbols and terms to write fractions, decimals, and percents. • Compare percents off to determine the better buy.
Applying: Students are able to order integers, decimals, and percents.	**Example**. Write the following amounts in order from least to greatest. .25, .10, .05, .01, .05, .10, .25 • Order coins according to value in decreasing and increasing order. • Put common fractions in order from least to greatest. • Put percents in order from least to greatest.
Developing: Students are able to order and compare numbers.	• Demonstrate the concept of none or some. • State number that comes before or after a given number. • Group objects into two groups and indicates which group has more/less.
Introducing: Students are able to order numbers.	• Demonstrate one to one correspondence. • Count objects in a given sets of manipulatives. • Put one object in a container, puts two objects in a container etc..

General Education Standard
7.N.1.2. Students are able to find and use common multiples and factors of whole numbers.

Extended Content
7.A.N.1.2. Students are able to find and use multiples and factors of whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify the common multiples and factors of whole numbers.	• List the first ten multiples of two and eight, and then circle the common multiple. • List the factors of two and eight, the circle the greatest common factor. • Apply divisibility rules.

Applying: Students are able to find and use multiples and factors of whole numbers.	• List the first five multiples of a given whole number. • List the factors of a given whole number. • Use divisibility rules of (2,3,4,6,9, and 10)
Developing: Students are able to skip count by 2, 5, and10.	
Introducing: Students are able to group numbers by 2, 5 and 10.	

Indicator 2: Apply number operations with real numbers and other number systems.

General Education Standard
7.N.2.1. Students are able to add, subtract, multiply, and divide integers and positive fractions..

Extended Content
7.A.N.2.1 Students will add and subtract integers and positive common fractions.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to add, subtract and multiply integers and common fractions.	• Write or trace integers and fractions. • Use integers and fractions together in addition subtract and multiplication problems. • Use a number line to solve problems.
Applying: Students are able to add and subtract integers and positive common fractions	**Example**. o 1 ½ + ½ = 1 o 1 – ½ = ½ • Identify integers. • Identify common fractions. • Identify the properties used in adding, subtracting and multiplying fractions.
Developing: Students are able to add and subtract numbers.	• Identify numbers and symbols involved in additions and subtraction. • Use a number line to add and subtract. • Use manipulatives to model addition and subtraction.
Introducing: Given a set of manipulatives, students are able to add manipulatives to and take manipulatives away from the set.	• Repeat addition of manipulatives. • Repeat subtraction of manipulatives.

Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.

General Education Standard
7.N.3.1. Students are able to use various strategies to solve one- and two-step problems involving positive fractions.

Extended Content
7.A.N.3.1. Students will use various strategies to solve one step problems involving positive fractions.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use various strategies to write one-step problems involving positive fractions.	• Write fractions. • Identify the strategies used to solve one-step problems. • Identify the necessary information in the problem.
Applying: Students are able to use various strategies to solve one step problems involving positive fractions.	**Example**: 1. $x + \frac{1}{4} = \frac{3}{4}$ • Add and subtract using fractions. • Identify inverse operation containing fractions. • Identify the steps involved to solve the problem.
Developing: Students are able to identify how many parts of a whole they have and express that in the form of a fraction.	• Add the number of objects together to find the total. • Count the number of select parts from a whole set of objects. • Identify the elements of a fraction.
Introducing: Students are able to use manipulatives and separate them into parts.	• Add objects to a group. • Subtract objects from a group. • Divide objects into groups.

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
7.S.1.1. Students are able to find the mean, median, mode, and range of a set of data.

Extended Content
7.A.S.1.1. Students are able to gather and organize data to find mode and range.

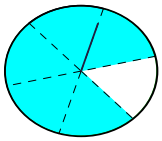
Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to gather and organize data to analyze mode and range.	
Applying: Students are able to gather and organize data to find mode and range.	**Example**: 1, 3, 2, 7, 4, 3, 5 Mode: 3 Range: 7-1=6
Developing: Students are able to gather and organize data.	
Introducing: Students are able to participate in activities to gather and organize data.	

General Education Standard
7.S.1.2. Students are able to display data, using frequency tables, line plots, stem-and-leaf plots and make predictions from data displayed in a graph.

Extended Content
7.A.S.1.2. Students are able to display data on a graph, table, or chart and make predictions from the data.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to make predictions from data displayed in a graph.	
Applying: Students are able to display data on a graph, table, or chart and make predictions from the data.	
Developing: Students are able to display data on a graph, table, or chart.	
Introducing: Students are able to gather information to answer questions of interest.	

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard **7.S.2.1. Given a sample space, students are able to find the probability of a specific outcome** **Extended Content** **7.A.S.2.1. Students are able to predict a simple specific outcome.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to find the probability of a specific outcome.	• What is the probability that the spinner will land on the not shaded part of the circle? • What is the probability that the spinner will land on the shaded part of the circle?
Applying: Students are able to predict a simple specific outcome.	• If you spin the spinner, do you think it will land on the shaded or the not shaded part of the circle? 
Developing: Students are able to recognize whether the outcome of a simple event is possible or impossible.	• What is the possibility you will spin and land on green?
Introducing: Students are able to given a repeated action, student will predict the outcome of given action.	

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADE 8

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

General Education Standard
8.A.1.1. Students are able to use properties to expand, combine, and simplify 1st degree algebraic expressions with the set of integers.

Extended Content
8.A.A.1.1. Students will identify and use the identity, associative, and communicative properties to simplify 1st degree algebraic expressions whole numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use the identity, associative, commutative, and distributive properties to simplify 1st degree algebraic expressions using whole numbers.	• Use and identify associative and identity properties. 1. (1+2)+4=1+(2+4) (associative) 2. 5+0=5 or 8*1=8 (identity) • Use commutative and distributive properties to evaluate expressions. **Examples:** 1. 1+2=2+1 (commutative)

(continued on next page)	2. 2(1+3)=2+6 (distributive) • Determine which property to use to simplify an expression. • Write problems dealing with the commutative, associative, and identity properties.
Applying: Students are able to identify and use the identity, associative, and communicative properties to simplify 1st degree algebraic expressions whole numbers.	• Use and identify associative and identity properties. **Examples:** 1. (1+2)+4=1+(2+4) (associative) 2. 5+0=5 or 8*1=8 (identity) • Use commutative property. **Examples:** 1+2=2+1 (commutative) • Determine which property to use to simplify an expression. • Identify the property and simplify the expression. **Example:** 1+(2+3)=(1+2)+3
Developing: Students are able to use objects and manipulatives to demonstrate the associative and commutative and identity properties.	• Use manipulatives to create two equal sets. • Use addition 1+0; uses subtraction 1-0, 1-1. • Use manipulatives to group objects in different ways to create equal sets.
Introducing: Students are able to identify situations in which the order of events makes a difference and situations in which the order does not make a difference (commutative and non-commutative tasks).	• Use manipulatives and hand over hand method students will create equal sets. (associative and commutative) • Match identical sets of numbers. (associative and commutative) • Given a two-step task students will identify which step to complete first. (associative)

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

General Education Standard **8.A.2.1. Students are able to write and solve two-step 1st degree equations, with one variable, and one-step inequalities, with one variable, using the set of integers.** **Extended Content** **8.A.A.2.1. Students are able to write and solve one-step 1st degree equations and inequalities with one variable, using whole numbers.**

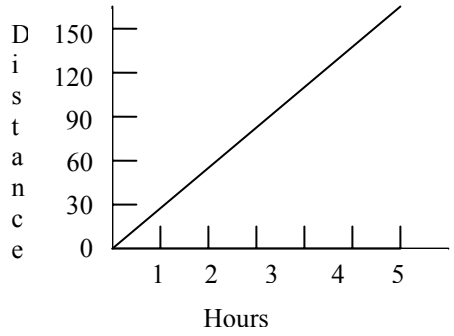
Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to write and solve one-step 1st degree equations with one variable using the set of integers.	• Identify the necessary information to construct an equation and inequalities. • Describe the basic language of equations and inequalities. • Identify and solve problem situations that match a given number sentence. • Write and identify integers.
Applying: Students are able to write and solve one-step 1st degree equations and inequalities with one variable, using whole numbers.	**Example** 1. x + 1 = 2 **Solve for x** 2. x + 1 > 2 **Solve for x** • Identify the necessary information to construct an equation and inequalities. • Describe the basic language of equations and inequalities. • Identify and solve problem situations that match a given number sentence.
Developing: Students are able to use symbols and manipulatives to solve equations and inequalities.	• Use manipulatives to represent equal and different sets. • Identify symbols. • Acknowledge inverse operations.
Introducing: Students are able to use manipulatives to complete a task or pattern.	• Removes objects from a set of objects. • Repeats imitation activities. **Example:** 1. Make equal number of sounds, blocks • Copy, trace and write numerals and mathematic symbols.

Indicator 3: Interpret and develop mathematical models.

General Education Standard
8.A.3.1. Students are able to describe and determine linear relationships.

Extended Content
8.A.A.3.1. Students will identify linear relationships through graphs.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe and determine linear relationships through graphs.	• Identify a positive correlation. • Identify a negative correlation.

	• Describe the pattern in a graph.
Applying: Students are able to identify linear relationships through graphs.	• Chart data to solve problems. **Example:**  *As the hours driven increases, what happens to the distance driven?* • Determine a pattern within a graph. • Use pictures, models, tables, charts, graph words, number sentences and mathematical notations to interpret mathematical relationships. (plant growth and time cards)
Developing: Students are able to extend a pattern using simple addition and subtraction	• Chart simple data (tallies, attendance). • Chart data to solve problems or complete tasks. • Determine a pattern within an alternate representation. (calendar, number line)
Introducing: Students are able to complete a pattern.	• Follow a patterned response. • Mimic a given pattern. • Recreate manipulative patterns. • Determine more or done to extend a pattern.

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard **8.A.4.1. Students are able to create rules to explain the relationship between numbers when a change in the first variable affects the second variable.** **Extended Content** **8.A.A.4.1. Students will demonstrate how the change in one variable affects/changes another variable in an equation.**

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain the relationship between numbers when a change in the first variable affects the second variable.	• Find the change between the first variable and second variable. • Solve algebraic equations. • Identify the necessary information needed to find the change between the first variable and the second variable.
Applying: Students are able to demonstrate how the change in one variable affects/changes another variable in an equation.	**Example**. $x + y = 10$ *As x increases what will happen to y?* • Use addition and subtraction to calculate a change in a number. • Use inverse operations. • Use models, pictures, to show how a change in one variable affects the change in another variable.
Developing: Students are able to Match/manipulate pictures and objects to create sets and make comparisons between sets.	• Use manipulatives to add and subtract objects from a group. • Recognize that changes can be controlled. • Recognize that a change in one decision can have an effect or consequence.
Introducing: Students are able to acknowledge a change in patterns/sets.	• Identify numbers and amounts. • Identify a change between two sets. • Identify the symbols necessary to solve equations(+,-,=).

General Education Standard
8.A.4.2. Students are able to describe and represent relations using tables, graphs, and rules.

Extended Content
8.A.A.4.2. Students will describe and represent relations using tables and graphs.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create tables and graphs to describe and represent relations.	• Use tables and graphs to justify solutions. • Interpret information in order to construct a table or graph.

	• Identify the parts of a table or graph.
Applying: Students are able to describe and represent relations using tables and graphs.	**Example:** x + y = 10 Find the values of y. <table><tr><td>x</td><td>y</td></tr><tr><td>1</td><td></td></tr><tr><td>2</td><td></td></tr><tr><td>3</td><td></td></tr></table>• Use tables or graphs to determine solutions. • Use addition and subtraction to find missing values. • Identify that a change in one of the numbers will cause a change in the second number.
Developing: Students are able to record data onto table/graph, when given data.	• Locate the appropriate place on a table/graph to record data. • Chart simple data/tallies attendance. • Graph or plot on a table or graph.
Introducing: Students are able to organize objects into groups.	• Match identical objects. • Sort objects based on one attribute (color or shape). • Use same or different to describe objects.

GEOMETRY

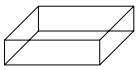
Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
8.G.1.1. Students are able to describe and classify prisms, pyramids, cylinders, and cones.

Extended Content
8.A.G.1.1. Students will be able to identify & describe prisms, pyramids, cylinders, and cones.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to classify prisms, pyramids, cylinders and cones.	• Classify objects as solids. • Compare the characteristics of 3 dimensional shapes.

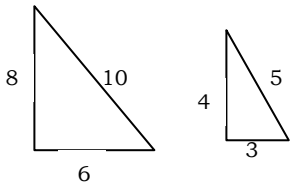
	• Match shapes by the same number of sides.
Applying: Students are able to identify & describe prisms, pyramids, cylinders, and cones.	**Example:** Identify this shape and describe how many edges, faces, and vertices it has.  • Count the number of faces of prisms, pyramids, cylinders and cones. • Count the number of edges of prisms, pyramids, cylinders and cones. • Match the names of the correct figure from a list.
Developing: Students are able to classify prisms, pyramids, cylinders and cones.	• Identify the number of faces of prisms, pyramids, cylinders and cones. • Identify the similar shapes that compose prisms, pyramids, cylinders and cones. • Sort prisms, pyramids, cylinders and cones.
Introducing: Students are able to match prisms, pyramids, cylinders, and cones.	• Match identical 3 dimensional objects. • Identify prisms, pyramids, cylinders and cones. • Compare prisms, pyramids, cylinders and cones.

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

General Education Standard
8.G.2.1. Students are able to write and solve proportions that express the relationships between corresponding parts of similar quadrilaterals and triangles.

Extended Content
8.A.G.2.1. Students will identify proportions that express the relationships between corresponding parts of similar quadrilaterals and triangles.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve proportions that express the relationships between corresponding parts of similar quadrilaterals and triangles.	• Use multiplication to find the missing measurement. • Identify how many times larger one object is than another.

	• Solve algebraic equations.
Applying: Students are able to identify proportions that express the relationships between corresponding parts of similar quadrilaterals and triangles.	• Identify proportions that express the relationships between corresponding parts of similar quadrilaterals and triangles. **Example**:  6/3 is proportional to 8/4 • Identify corresponding sides of quadrilaterals. • Write fractions that are proportional. • Use multiples of numbers.
Developing: Students are able to sort according to similar proportions when given quadrilaterals and triangles.	• Count the number of sides on quadrilaterals. • Identify the size of an object • Compare two objects of similar proportions.
Introducing: Given two quadrilaterals, students are able to identify which object is larger/smaller.	• Sort objects by size. • Identify a quadrilateral.

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

General Education Standard
8.M.1.1. Students are able to apply proportional reasoning to solve measurement problems with rational number measurements.

Extended Content
8.A.M.1.1. Students will solve proportional measurement problems with rational number measurements.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to differentiate proportional measurement problems with	

rational numbers.	
Applying: Students are able to solve proportional measurement problems with rational number measurements.	**Example:** Ex. $\frac{1}{12} = \frac{x}{24}$
Developing: Students are able to solve time and calendar problems.	
Introducing: Students are able to participate in measurement activities with other students.	

General Education Standard
8.M.1.2. Students are able to find area, volume, and surface area with whole number measurements.

Extended Content
8.A.M.1.2. When given formulas students will find circumference/perimeter and area of circles and triangles.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to find perimeter with circumference and area of circles and triangles.	
Applying: Students are able when given formulas to find circumference/perimeter and area of circles and triangles.	**Example:** Area = ½ x b x h b = 2, h = 3 ½ x 2 x 3 = 1 x 3 = Area = 3
Developing: Students are able to compare and order concrete circles and triangles.	
Introducing: Students are able to participate in measurement activities with other students in order to identify measurement symbols.	

NUMBER SENSE

Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
8.N.1.1. Students are able to represent numbers in a variety of forms and identify the subsets of rational numbers.

Extended Content
8.A.N.1.1. Students will represent numbers in a variety of forms and identify the subsets of rational numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to represent numbers in a variety of forms and identify the subsets of rational numbers.	• Choose two numbers between three and four and place them on a number line. • Choose the whole number closet to ¼. • Round a given amount to the nearest dollar.
Applying: Students will represent numbers in a variety of forms and identify the subsets of rational numbers.	• Determine whether a set of objects is odd or even. • Identify if a number is odd or even. • Identify the multiples of two. **Example:** Write the even numbers from one to 10.
Developing: Students are able to order and compare numbers.	• Demonstrate the concept of none or some. • State the number that comes before or after a given number. • Group objects into two groups and indicates which group has more/less.
Introducing: Students are able to count numbers.	• Count numbers.

Indicator 2: Apply number operations with real numbers and other number systems.

General Education Standard
8.N.2.1. Students are able to read, write, and compute within any subset of rational numbers.

Extended Content
8.A.N.2.1. Students will read, write, and compute within any subset of positive rational numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to read, write, and compute within any subset of rational numbers.	• Identify negative numbers. • Compute negative numbers on a number line. • Compute negative and positive numbers on a number line.
Applying: Students are able to read, write, and compute within any subset of positive rational numbers.	• Identify the properties used to compute decimal problems. • Compute positive rational numbers using a number line. • Identify symbols and numbers used to answer computation problems. **Example** . 2.35 + 4.05 = 6.4
Developing: Students are able to read and write any subset of positive rational numbers.	• Identify decimals in written form. • Identify whole numbers in written form. • Trace positive rational numbers.
Introducing: Students are able to use manipulatives, and separate them into parts.	• Share objects equally between two groups. • Identify if an object is whole or in parts. • Manipulate objects to make two objects from one.

Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.

General Education Standard
8.N.3.1. Students are able to use various strategies to solve multi-step problems involving rational numbers.

Extended Content
8.A.N.3.1. Students will use various strategies to solve multi-step problems involving positive rational numbers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use various strategies to solve multi-step problems involving rational numbers.	• Identify positive and negative rational numbers. • Add and subtract using rational numbers. • Identify appropriate rational numbers for

	the problem.
Applying: Students are able to use various strategies to solve multi-step problems involving positive rational numbers.	• Identify the essential parts of the problem. • Identify strategies to solve multi-step problems. • Add and subtract using multi-step problems. **Example**: 1. Susan went to the store and purchased a shirt for $12.99 and a pair of earrings for $3.98. She gave the clerk $20.00. How much change will Susan get?
Developing: Students are able to use various strategies to solve one-step problems involving positive rational numbers.	• Identify strategies to solve one-step problems involving positive rational numbers. • Identify the problem. • Addition and subtraction to solve one-step problems involving positive rational numbers.
Introducing: Students are able to solve addition and subtraction problems up to five.	• Add and subtract one digit numbers. • Identify inverse operations. • Use manipulatives to add and subtract objects from a set.

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

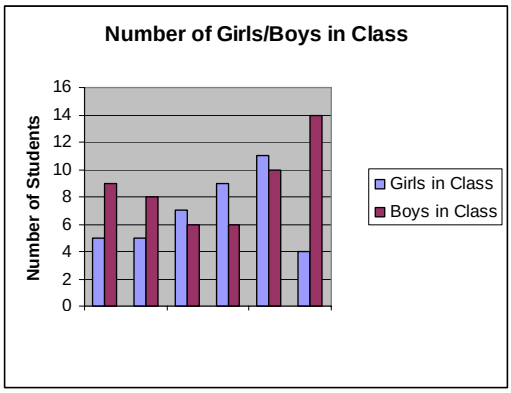
Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard **8.S.1.1 Students are able to find the mean, median, mode, and range of a data set from a stem-and-leaf plot and a line plot.** **Extended Content** **8.A.S.1.1. Students are able to order numbers to find a median, mode, and range of an odd set of data.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to find the median of a set of data.	

Applying: Students are able to order numbers to find a median, mode, and range of an odd set of data.	
Developing: Students are able to order a set of numbers to 20.	
Introducing: Students are able to count to 10.	

General Education Standard
8.S.1.2. Students are able to use a variety of visual representations to display data to make comparisons.

Extended Content
8.A.S.1.2. Students are able to use a variety of visual representations to display data to make comparisons.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create a variety of visual representations to display data to make comparisons and predictions.	
Applying: Students are able to use a variety of visual representations to display data to make comparisons.	**Example:** 
Developing: Students are able to use a variety of visual representations to display data.	
Introducing: Using manipulative, students will identify which group has the most/least in a set of collected data.	

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard **8.S.2.1. Students are able to find the sample space and compute probability for two simultaneous independent events.** **Extended Content** **8.A.S.2.1. Students are able to find and compute probability.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to compare probability for independent events.	
Applying: Students are able to find and compute probability.	**Example:** One red marble and two green marbles are placed in a bag. What is the probability that a red marble will be selected from the bag? 1/3
Developing: Students are able to list possible outcomes of a simple event and make predictions about which outcome is more or less likely to occur.	
Introducing: Students are able to predict the outcome of a given event.	

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

MATH GRADES 9-12

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

ALGEBRA

Goal 1: Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities.

Indicator 1: Use procedures to transform algebraic expressions.

General Education Standard
9-12.A.1.1. Students are able to write equivalent forms of algebraic expressions using properties of the set of real numbers.

Extended Content
9-12.A.A.1.1. Students are able to use properties to simplify first degree algebraic expressions using identities, commutative, associative, properties using fractions, and decimals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use properties of real numbers; including the distributive property.	• 2(3+4) = 14
Applying: Students are able to use properties to simplify first degree algebraic expressions using identities, commutative, associative,	• ½ + 1 = 1 + ½ • $.50 + 0 = $.50 • $2.00 * 1 = $2.00

properties using fractions, and decimals.	• .4 + (.3 +.7) = (.4 + .3) +7
Developing: Students are able to use properties to simplify first degree algebraic expressions using identities, commutative, associative, properties using whole numbers.	• 2+3 = 3+2 • 1+ 0 =1
Introducing: Students are able to recognize equivalent expressions.	• Left side = right side • 5 = 5

Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.

9-12.A.2.1. Students are able to use algebraic properties to transform multi-step, single variable, and first-degree equations.

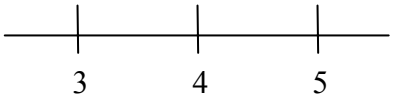
Extended Content
9-12.A.A.2.1 Students are able to solve two step, first degree equations (properties, variables, symbols).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve multi-step, single variables, and first-degree equations.	• (3 + □ +10) = 26 - 2; □ = 11
Applying: Students are able to solve two-step, first degree equations (properties, variables, symbols.)	• 1 + □ = 5 +3; □ = 7
Developing: Students are able to solve one-step, first degree equations (properties, variables, symbols.)	• 1 + □ = 5; □ = 4
Introducing: Students are able to recognize a first degree equation.	• 1 + [4] = 5

General Education Standard
9-12.A.2.2. Students are able to use algebraic properties to transform multi-step, single variable, and first-degree inequalities and represent solutions using a number line.

Extended Content
9-12.A.A.2.2. Students are able to translate verbal/written expression into an algebraic inequality.

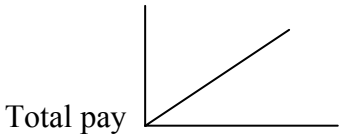
Grade Level Alternate Academic	Target Skills

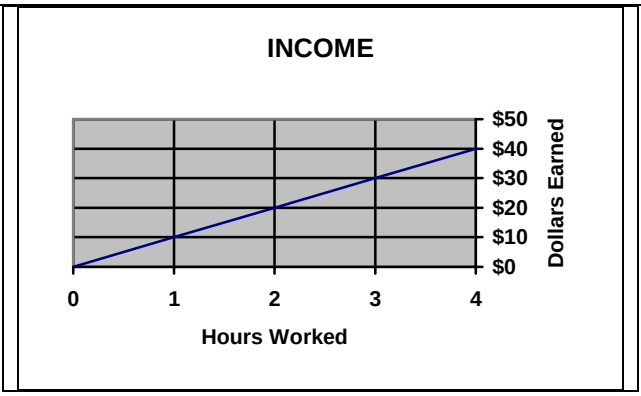
Achievement Descriptors	
Advancing: Students are able to solve inequalities, (properties, variables, symbols,) with representations.	• Find a number that will work in this inequality: x-4>1 Answer: Any number greater than 5.
Applying: Students are able to translate verbal/written expression into an algebraic inequality.	• Write the following as an algebraic inequality: Six is less than 10 Answer: 6<10
Developing: Students are able to understand inequalities, (properties, variables, symbols,) with representations. (The student puts the correct symbol in the problem.)	• Given 4 and 2 the student will complete: □ > Δ 4 > 2
Introducing: Students are able to recognize greater than or less than on a number line.	 3 4 5 • Numbers on the right are greater than numbers on the left.

Indicator 3: Interpret and develop mathematical models.

General Education Standard
9-12.A.3.1. Students are able to create linear models to represent problem situations.

Extended Content
9-12.A.A.3.1. Students are able to interpret and develop relationships between problems with constant rate of change.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create linear models using independent and dependent variables.	• Does your total pay depend on hours work?  Total pay Hours worked • Commission, net/gross pay, tips, and taxes.
Applying: Students are able to interpret and develop relationships between problems with constant rate of change.	• Does your total pay depend on hours work? **If you work more hours you will earn more pay. • Commission, net/gross pay, tips, and taxes.

Developing: Students are able to graph or table to illustrate constant rates of change.	 • Provided data and table/graph, the student will plot the points. You get paid $5.00/hour. Plot what you would make after 1 hr., 2hrs, and 3hrs.
Introducing: Students are able to recognize various rates of change.	 = $3.00 So,  = $.50

General Education Standard
9-12.A.3.2. Students are able to distinguish between linear and nonlinear models.

Extended Content
9-12.A.A.3.2/4.1 Students are able to complete the next three numbers in a given pattern (graphs, tables, equations).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain the rule of the pattern.	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td><td>12</td><td>14</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> • As the first increases by ones the second increases by twos.
Applying: Students are able to complete the next three numbers in a given pattern (graphs, tables, equations.)	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>2</td><td>4</td><td>6</td><td>8</td><td>**?**</td><td>**?**</td><td>**?**</td></tr></table>
Developing: Students are able to distinguish if a pattern exists (graphs, tables, equations.)	• Does a pattern exist? 0 5 10 15 20 ____ ____ ____
Introducing: Students are able to explore various patterns.	

Indicator 4: Describe and apply the properties and behaviors of relations, functions and inverses.

General Education Standard **9-12.A.4.1. Students are able to use graphs, tables, and equations to represent linear functions.** **Extended Content** **9-12.A.A.4.1 *Combined with* 9-12.A.A.3.2 (see target skills and descriptors above)**

GEOMETRY

Goal 2: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.

General Education Standard
9-12.G.1.1. Students are able to apply the properties of triangles and quadrilaterals to find unknown parts.

Extended Content
9-12.A.G.1.1. Students are able to identify similarities and differences of angles/lengths of sides of triangles and quadrilaterals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to apply the properties of triangles and quadrilaterals to find unknown parts.	• When given 2 adjacent sides of a rectangle, plug in the remaining information to find the perimeter.
Applying: Students are able to identify similarities and differences of angles/lengths of sides of triangles and quadrilaterals (3 and 4 sided figures).	• Compare/contrast Scalene Triangle and an Equilateral Triangle. (Spaghetti, licorice can be used as visuals)
Developing: Students are able to define the characteristics of triangles and quadrilaterals.	• Triangle: Define the characteristics of an equilateral triangle.
Introducing: Students are able to classify types of triangles and quadrilaterals.	• Acute, obtuse, right, equilateral, isosceles, scalene. • Square, kite, rhombus, parallelogram, rectangle, trapezoid.

Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.

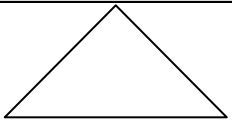
General Education Standard
9-12.G.2.1. Students are able to recognize the relationship between a three-dimensional figure and its two-dimensional representation.

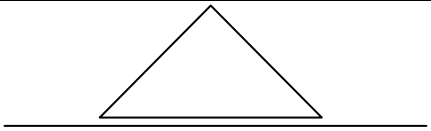
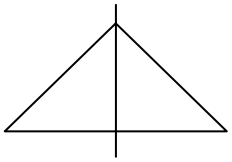
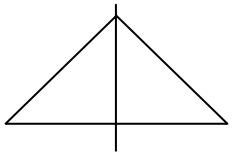
Extended Content
9-12.A.G.2.1 Students are able to when given a three dimensional figure, the student will determine what two dimensional shapes exists.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to given a two dimensional representation the student will create a three dimensional figure (NET).	
Applying: Students are able to given a three dimensional figure, the student will determine what two dimensional shapes exists.	• Give the student an ice cube or a soup can and they recognize the shapes that create it.
Developing: Students are able to will identify and explain the differences between a two dimensional and three dimensional shapes.	• When given a tissue box and a sheet of paper, the student will explain the differences.
Introducing: Students are able to will identify the name of the 3-dimensional shape when given visual representation.	• Cone, prism, and cylinder

General Education Standard
9-12.G.2.2. Students are able to reflect across vertical or horizontal lines, and translate two dimensional figures.

Extended Content
9-12.A.G.2.2. Students are able to trace a mirror image vertically or horizontally.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to translate two dimensional figures.	 • Move the figure up 3 and over two on a coordinate grid.

Applying: Students are able to trace a mirror image vertically or horizontally.	 • Triangle will reflect on the other side of the line.
Developing: Students are able to identify a vertical and horizontal reflection	• This is a vertical reflection: 
Introducing: Students are able to identify a properly reflected image.	

General Education Standard
9-12.G.2.3. Students are able to use proportions to solve problems.

Extended Content
9-12.A.G.2.3. Students are able to write and solve proportions through visual groupings.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to will write and solve proportions from word problems.	• If a recipe calls for a ½ cup of sugar, and you only have ¼ cup of sugar, how many scoops are needed using ¼? • To make oatmeal you use 2 cups water to 1 cup of oatmeal. If you use 4 cups of water, how much oatmeal do you need?
Applying: Students are able to will write and solve proportions through visual groupings.	• 2 cans for a dollar…What would be the total cost of 4 cans?
Developing: Students are able to solve proportions.	• 1 is to 2 as 4 is to?
Introducing: Students are able to demonstrate how to reduce fractions.	• Using a chart, find common multiples of denominators and numerators.

MEASUREMENT

Goal 3: Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them.

Indicator 1: Apply measurement concepts in practical applications.

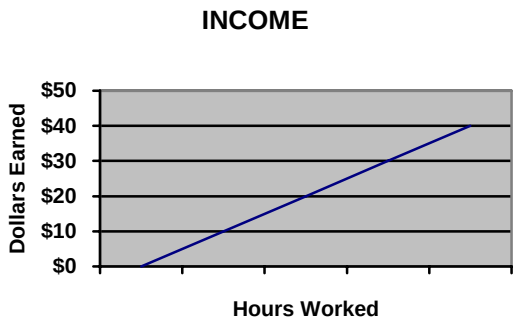
General Education Standard
9-12.M.1.1. Students are able to choose appropriate unit label, scale, and precision.

Extended Content
9-12.A.M.1.1. Students are able to apply appropriate labels and scales for length, weight, and volume in English units.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to apply the metric system of measurement.	• Meter- Length • Liter- Volume • Gram- Weight
Applying: Students are able to apply appropriate labels and scales for length, weight, and volume in English units	• Length=feet, distance between towns=miles.
Developing: Students are able to convert measures of lengths, or weight, or volumes to different units	• Inches to feet
Introducing: Students are able to define the different units of measurement and recognizes the appropriate tools for measurement.	• Tape measure/Ruler • Scale • Pop Bottle/Milk Jug

General Education Standard
9-12.M.1.2. Students are able to use suitable units when describing rate of change.

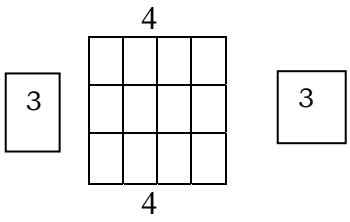
Extended Content
9-12.A.M.1.2. Students are able to use suitable units when describing rate of change.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to graph suitable units when describing rate of change.	
Applying: Students are able to use suitable units when describing rate of change.	• Miles/hour, dollars/hour, and miles/gallon
Developing: Students are able to extract appropriate information from a real-life situation.	• Sally earns $8.00 dollars per hour, last week she worked 5 hours and got off at 3:00. What numbers are needed to compute the total pay for that day? The student will pull out $8.00 and 5 hours out of the problem.
Introducing: Students are able to recognize a rate of change in a given situation.	• Sally earns **$8.00 dollars per hour**, last week she worked 5 hours and got off at 3:00.

General Education Standard
9-12.M.1.3. Students are able to use formulas to find perimeter, circumference, and area to solve problems involving common geometric figures.

9-12.A.M.1.3. Students are able to when given formulas, solve circumference, area and perimeter from a given visual geometric figure.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to choose from formulas provided; students will solve circumference, area, and perimeter from a given visual geometric figure.	• Find the circumference of a circle with radius 8.

Applying: Students are able to when given formulas, students will solve circumference, area and perimeter from a given visual geometric figure.	• B= 2, H = 8, Area of a rectangle = ?
Developing: Students are able to identify the correct formulas for different geometric figures.	• ½ bh= Area of a triangle • S * S = Area of a square • B* H = Area of a rectangle • S + S + S + S = Perimeter
Introducing: Students are able to calculate the perimeter of quadrilaterals.	 • Perimeter = 14

Number Sense

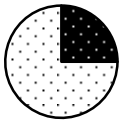
Goal 4: Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation.

Indicator1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.

General Education Standard
9-12.N.1.1. Students are able to identify multiple representations of a real number.

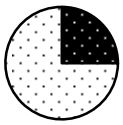
Extended Content
9-12.A.N.1.1. Students are able to identify equivalent representations of numbers using fractions, decimals, diagrams and percents

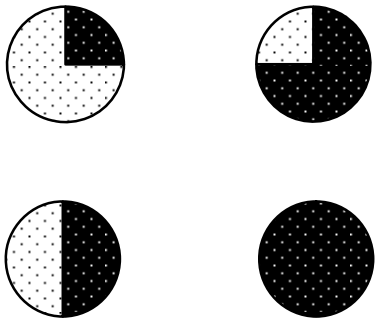
Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify equivalent representations of numbers using fractions, decimals, diagrams, percents and numbers with exponents.	$4 = 8/2 = 10\text{-}6 = 2^2$
Applying: Students are able to identify equivalent representations of numbers using fractions, decimals, diagrams and percents.	• ½ = ? = ?%
Developing: Students are able to identify equivalent representations of numbers using decimals, diagrams and percents.	• .5 = ? %

Introducing: Students are able to identify equivalent representations of numbers using decimals and diagrams.	Shaded area of the circle below = ?  A. 1/2 B. 1 C. ¼ D. ¾

General Education Standard
9-12.N.1.2. Students are able to apply the concept of place value, magnitude, and relative magnitude of real numbers.

Extended Content
9-12.A.N.1.2. Students are able to apply the concept of place value, magnitude, and relative magnitude using percents, fractions, diagrams and decimals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to apply the concept of place value, magnitude, and relative magnitude using percents, fractions, diagrams, decimals and numbers of exponents.	 • Represent the shaded region of pie chart above in a percent and a fraction
Applying: Students are able to apply the concept of place value, magnitude, and relative magnitude using percents, fractions, diagrams and decimals.	• Write in increasing order the following: ¼, 75%, .5
Developing: Students are able to apply the concept of place value, magnitude, and relative magnitude using percents, diagrams and decimals.	• Write in increasing order the following: .25, 75%, .5, 1

Introducing: Students are able to apply the concept of place value, magnitude, and relative magnitude using diagrams and decimals.	• Arrange the shaded region below in increasing order 

Indicator2: Apply number operations with real numbers and other number systems.

General Education Standard
9-12.N.2.1. Students are able to add, subtract, multiply, and divide real numbers including integral exponents.

Extended Content
9-12.A.N.2.1. Students are able to add and subtract real numbers with or without a calculator.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to add, subtract, multiply, and divide real numbers including integral exponents.	• Using a calculator, a student could calculate discounts, tip percentage, total bill, and net pay from time card.
Applying: Students are able to add and subtract real numbers with or without a calculator.	• Checking account-withdrawals, deposits, overdrawn, and overdrafts.
Developing: Students are able to subtracts real numbers with or without a calculator.	• 80-69 • 25-5 • 4 cars – 2 cars
Introducing: Students are able to add real numbers with or without a calculator.	• 77+33 6 cars + 2 cars

Indicator 3: Develop conjectures, predictions, or estimations to solve problems and verify or justify results.

General Education Standard
9-12.N.3.1. Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results.

Extended Content
9-12.A.N.3.1. Students are able to use estimation strategies in problem situations to predict results.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results.	• Use a calculator to check for reasonableness of results. **Example:** 1. 526 + 128 = ? 500 + 100 = ? OR 526 + 128 = ? 2. A. 500 and 100 B. 550 and 130 C. 600 and 200 D. 515 and 120
Applying: Students are able to use estimation strategies in problem situations to predict results.	• Mental math: **Example:** 1. Rounding to the nearest 10^{th}, 100^{th} 2. 521 *12 = 500 * 10
Developing: Students are able to round to appropriate decimal place value.	• Round to the nearest tenth (1.87=1.9)
Introducing: Students are able to round to nearest whole number.	• 6.1=6 • $1.83=$2.00

General Education Standard
9-12.N.3.2. Students are able to select alternative computational strategies and explain the chosen strategy.

For the general education standard 9-12N.3.2 it is felt a lower level of complexity is not attainable.

STATISTICS AND PROBABILITY

Goal 5: Students will apply statistical methods to analyze data and explore probability for making decisions and predictions.

Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.

General Education Standard
9-12.S.1.1. Students are able to draw conclusions from a set of data.

Extended Content
9-12.A.S.1.1. Students are able to gather and organize data.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to gather, organize, and draw conclusions from data.	• Put gathered data in sequential order and answer questions regarding the data. **Example:** 1. Who likes country the best? 2. Boys or Girls
Applying: Students are able to gather and organize data.	• Conduct a survey. • Uses interview, surveys, and observations to gather data. **Example**: 1. Observes the sky condition for 5 days, conducts a survey on classmates' eye colors.
Developing: Students are able to organize given data in a logical manner.	• Puts data in order. • Counts sequentially. • Sorts clothes. • Sort objects. • Organize/Clean desk. • Arrange coins in progressive value.
Introducing: Students are able to sorts relevant from irrelevant information from a given scenario. ***(continued on next page)***	• Responds yes or no question and to problems presented pictorially or numerically in class. **Example**. Its cold outside should I wear a coat? 1. Yes or no • Given a scenario, answer appropriate questions. **Example:** Sally goes to school with 45 freshman, 1. 100 sophomores, 98 juniors, 101 seniors and 30 teachers. Sally is taking 5 classes, how many total

	students are in the school? • Demonstrates a differentiated response to stimuli. **Example:** 1. Recognizes and initiates a response when cold, hot or hungry, responds to fire alarm or tornado drill. • From a group of objects identify/sort unlike object or shape. **Example:** 1. Sesame Street song "Which one of these is not like the other?" • Define meaning of relevant and irrelevant.

General Education Standard
9-12.S.1.2. Students are able to compare multiple one-variable data sets, using range, interquartile range, mean, mode, and median.

Extended Content
9-12.A.S.1.2 Students are able to compare multiple one-variable data sets using range, mean, mode, and median.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare multiple one-variable data sets using an even number of elements to compute range, mean, mode, and median.	• Using a calculator, and chart, find the range (highest number minus the lowest number), mode (numbers duplicated the most), and median (average of 2 middle values when it's ordered least to greatest) and mean (average of all numbers). **Example**: 1. Even number of data 2, 9, 4, 3, 9, 1
Applying: Students are able to compare multiple one-variable data sets using range, mean, mode, and median. ***(continued on next page)***	• Use a calculator, and chart, find the range (highest number minus the lowest number), mode (numbers duplicated the most), median (middle value when it's ordered least to greatest) and mean (average of all numbers). **Example**: 1. 2, 9, 4, 3, 9 • Given a series of numbers find the mean. **Example**: Add 2+5+8=15 Divide by 3. Mean =5

	• Calculate mean by hands-on use of manipulatives. **Example**. Student given different quantities gather all and distribute equally.
Developing: Students are able to compare multiple one-variable data sets using range, mode, and medians of an odd numbered set.	• Put a group of number in sequential order. • Locate the middle of anything. (middle of a face, table, etc.) • Using a calculator, and chart, find the range (highest number minus the lowest number), mode (numbers duplicated the most) and median (middle value when it's ordered least to greatest: 2, 9, 4, 3, 9)
Introducing: Students are able to compare multiple one-variable data sets using range and mode.	• Distinguish between large and small (this is intro to range). • Distinguish between most often and least often. • Using a calculator, and chart, find the range (highest number minus the lowest number) and mode (numbers duplicated the most: 2, 9, 4, 3, 9, 1) • Students will distinguish which event will occur the most. **Example**. 1. Given two students clapping hands a different amount of times. Choose which occurs the most. MODE

General Education Standard
9-12.S.1.3. Students are able to represent a set of data in a variety of graphical forms and draw conclusions.

Extended Content
9-12.A.S.1.3. Students are able to interpret data in a variety of graphical forms and draw conclusions.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to create a graph using different graphical forms.	• Given data students will create a graph bar, line, pie, and pictograph.
Applying: Students are able to interpret data in a variety of graphical forms and draw conclusions. ***(continued on next page)***	• Answers questions from given graphs bar, line, pie, and pictograph • Draws conclusions from various representation of data set

	Example : 1. Tables, bar graphs, etc.
Developing: Students are able to read data in a variety of graphical forms.	• Breaks tasks into smaller parts and makes connections to prior knowledge. • Graphs are given and information is extracted.
Introducing: Students are able to identify the different types of graphs.	• Chooses a symbol, picture, or object from four choices via eye gaze to represent his/her preference of a food item to add to a class graph. • Matches types of graphs with visual representation. • Uses food items to represent graphs. **Example:** 1. Pizza – pie graph 2. Vegetable tray – pictograph • Demonstrates a recognizable response to display emotions. • Uses gestures, symbols, or pictures to relate information to represent communicative intent.

Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.

General Education Standard
9-12.S.2.1. Students are able to distinguish between experimental and theoretical probability.

Extended Content
9-12.A.S.2.1. Students are able to distinguish between experimental and theoretical probability.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to predict and compare outcomes based on theoretical and experimental probability.	• The more you flip a coin for example, the closer your value will get to theoretical value of one-half.
Applying: Students are able to distinguish between experimental and theoretical probability.	• Experimental: 10 flips give you six heads and four tails. • Theoretical: 10 flips give you five of each. Flip a coin, rolling dice

<table>
<tr><td>Developing: Students are able to record accurate information from possible outcomes.</td><td>• Flips a coin and records heads or tails<table><tr><td>Heads</td><td></td><td></td><td></td><td></td></tr><tr><td>Tails</td><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Introducing: Students are able to explore what events are predictable.</td><td>• Roll dice, flip a coin, weather, draw a card</td></tr>
</table>